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Kidney Transplantation in Identical Twins*

• A successful human homorenaltransplantation between male identical twins is reported. A modification in technique of ureteroneocystostomy is reported.

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KIDNEY transplantation on pigs and dogs began in 1902.[1-3] The early failures were explained by faulty technique, thrombosis, infection or intercurrent disease. Biologic incompatibilities, resulting in a rejection of foreign tissue by the host, now recognized as an antigen-antibody reaction, were not understood.

Renal homotransplantation in animals has been unsuccessful. In humans the success has been temporary.[4] Renal autotransplantation with the iliac and renal vessels united and the ureter implanted in the bladder has been found to function indefinitely.[5] In bovine dizygotic twins, which have common chorions permitting interchange of blood during embryonic life, skin grafting [6] and renal transplants [7] have been successful. Since skin grafting between identical (monozygotic) twins has likewise been successful [8] it becomes apparent that success in grafts and transplants requires immunological and genetic similarity.

In 1956, Murray, Merrill and Harrison [9] reported the first successful human renal homotransplant on 24 year old identical twins. The recipient was well three and a half years later. Since then they [10a] have reported 7 additional cases while Hume and Schilling [10b] have reported 1. Of Murray's 8 cases 1 was a technical failure and 2 have died from the kidney disease of the host. Hume's case has been successful to date. In an effort to increase the number of compatible donors, the antigenic properties of the donor, the graft and the recipient have been altered but no long-standing success has been reported.

The following case of renal transplantation in identical twins is reported because it is the tenth on record [11] and the technique employed is somewhat different from those reported by others.[10]

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* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, May 3, 1960, in Baton Rouge.

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Case Report

A 36 year old man was admitted to Charity Hospital, New Orleans, Louisiana, in a state of uremia on October 5, 1959. There was a history of bouts of pyuria since 2 years of age, and at 14 years, a urologic examination revealed a large right hydronephrosis with a dilated ureter and a large ureteral orifice. There was albumin in the urine. The left kidney was normal. At age 16 years there was evidence of progressive damage to the right kidney and at age 17 years an atrophic, functionless, pyelonephritic right kidney was removed. The blood urea nitrogen at the time was 18 mg./% and the phenolsulfonphthalein excretion was 30 and 45 per cent respectively in two hours. One year later there was still a heavy trace of albumin in the urine. At age 22 years the blood urea nitrogen had risen to 58 mg./% and an intravenous pyelogram showed delayed excretion and incomplete filling of the left kidney pelvis. In spite of restricted activity and a low salt diet, there was progressive physical weakness.

For two months prior to the present admission there had been increasing weakness, nervousness, loss of appetite and weight. Since the patient was one of identical twins, his physician, Dr. Saul Landry, Jr. of Houma, Louisiana, suggested the possibility of a renal transplant and referred him for evaluation. Evaluation of the donor revealed no renal pathology. An intravenous urogram was normal. On August 29, 1959, reciprocal skin grafts were performed to determine compatibility between the twins and the survival of these grafts was accepted as evidence of antigenic similarity.

The patient's condition rapidly deteriorated and he was readmitted to the hospital with advanced uremia.

On physical examination the patient was pale, lethargic and edematous. Muscle twitching and scratching of the skin were evident. The blood pressure was 188/100 mm. Hg.

The urine was acid with a specific gravity of 1.013; albumin 3 plus; sugar 3 plus; and granular casts. Red and white blood cells were noted on microscopic examination. Urine culture was negative. The phenolsulfonphthalein excretion was zero in 60 minutes and the Fishberg was 1.006. The blood urea nitrogen was 220 mg./%, creatinine 20 mg./%, serum Na. 133 meq/1, potassium 5.2 meq/1, chloride 99 meq/1, carbon dioxide content 9 meq/1, serum phosphate 15 mg./%, calcium 4.3 meq/1, and packed cell volume 12%. Hematologic studies revealed findings typical of advanced chronic uremia.

X-ray of the chest was negative. On the fourth hospital day he was treated by external dialysis with an artificial kidney for six hours with good clinical response. Following dialysis the serum sodium was 134 meq/1, potassium 3.0 meq/1 and carbon dioxide 21.9 meq/1.

On October 16, 1959, in adjacent operating rooms under general endotracheal anesthesia, a left nephrectomy was started on the donor (J.G.M.) simultaneously with preparation of the transplant site in the recipient (O.C.). The kidney of the donor was removed through a thoracoabdominal approach by resecting the eleventh rib. This exposure facilitated dissection of the renal pedicle and permitted the ureter to be sectioned in its lower third portion. The retroperitoneal area of the recipient was exposed through an incision in the lower right quadrant, just above and extending to the midline a finger's breadth above the pubic arch and parallel to the inguinal ligament. The kidney was transferred in a basin of heparinized, cool saline and placed in the right iliac fossa where an end-to-end anastomosis between the renal and hypogastric arteries and an end-to-side anastomosis between the renal and external iliac veins were performed (O.C.).

Before arterial anastomosis was performed it was necessary to remove an atherosclerotic plaque from the hypogastric artery. The arterial and venous anastomosis were satisfactory and the kidney become turgid and pink when the arterial clamp was removed. There was a delay of about ten minutes before urine was excreted but it began to then flow in copious amounts. At this point the bladder was opened (J.C.M.) on its anterior surface and the ureter brought through the lower right dependent part of the bladder and passed through an oblique submucosal tunnel and then anastomosed to the edges of the mucosa of the bladder. The ureter was severed 4mm. beyond its attachment to the bladder mucosa. After placing a mushroom catheter through a stab wound in its superior surface, the bladder was closed. The wound was then closed anatomically.

The operation started at 8:10 A.M. and ended at 1:20 P.M. The donor kidney was removed at 10:30 A.M., the arterial anastomosis completed at 11:00 A.M. and the venous anastomosis at 11:15 A.M. Total time of ischemia of the kidney was forty-five minutes.

The donor was discharged ten days following operation with no alteration of blood chemistry, blood pressure or urine.

After operation the improvement of the recipient was marked. The urine output was 5,680 ml. in the first twenty hours. With onset of kidney function there was immediate improvement in the blood chemistries and a reduction of the blood pressure. There was, however, a continued loss of sodium.

Ten days after readmission on November 17, a left nephrectomy was performed. The kidney weighed 49 grams and pathologically showed

severe chronic pyelonephritis. Seven days later an intravenous urogram and a radioactive renogram [12] revealed the transplanted kidney to be functioning normally with no evidence of obstruction. Microscopic examination of the urine at this time showed rods and cocci. This infection has since responded to Furadantin. The blood urea has returned to normal and the blood pressure is 114/90.

Delayed cystogram revealed no reflux up the ureter and at cystoscopy the ureteral orifice of the transplant was elliptical and similar to the other orifices.

Discussion

The prospective donors are limited; one of every three sets of twins are identical and twinning occurs in every ninety pregnancies.

The donor must submit to reciprocal skin grafts to be identified as an identical twin. He must be healthy with kidneys free from infection and possessing normal function. The recipient should have irreparably damaged kidneys, a lower urinary tract free from obstruction, a controllable infection, if any, and quiescent renal disease.[10a] In advanced uremia the recipient may have to be dialyzed to be capable of receiving a transplant.

The iliac fossa is an ideal site for transplantation for it permits implantation of the ureter into the bladder while retaining an environment comparable to that of the original kidney area. Using the donor's opposite kidney permits a correct relationship between the blood vessels and pelvis.

The handicap of a calcified plaque in the artery of the recipient was overcome by endarterectomy. The modified technique employed in ureteral transplantation was successful.

Following transplantation the improvement of the recipient was marked. The urinary output was 5,680 ml in the first 20 hours. Within a week there was a marked reduction in the blood urea nitrogen and blood pressure, and the patient became alert, cheery and optimistic. The blood chemistries, blood pressure and body weight decreased but did not reach normal levels until the diseased kidney of the recipient was removed. Following surgery the excretion of sodium in the urine became elevated and remained so for several weeks. This may have been the result of renal denervation, ischemia or a combination of causes.

Of added significance is the demonstration that successful transplants can be done wherever the facilities are adequate for laboratory investigation, artificial kidney therapy and personnel trained in vascular and urological surgery.

Summary

A successful human homorenaltransplantation between two 36 year old male identical twins is reported. A modification in technique of ureteroneocystostomy is presented.

Negative sodium balance was seen for a period of time following surgery. The cause is unknown but it may be due to renal denervation or a combination of causes.

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A Community Cytology Program*

• This community service has been in operation in Baton Rouge since July 1, 1958, and has proved to be of value in the detection of early carcinoma.

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THE use of vaginal cytologic examination in the detection of early cancer of the uterus has become well established. The procedure is presently undergoing transition from a proven experimental tool to a practical aid for the practitioner. One method of accomplishing the transition is setting up of cytologic programs for use by all the practicing physicians of the community. The Baton Rouge cytology program is such an endeavor. It is patterned after several pioneer projects of this type but resembles more closely the Toledo, Ohio, program.[1]

Organization and Operation

The Woman's Hospital Foundation Cancer Detection Laboratory was started by the gynecologists of Baton Rouge. It is nonprofit in operation. The laboratory furnishes to any doctor requesting them materials for preparing vaginal smears in his own office. No smears are done in the laboratory, so that it is in no sense a clinic. Pick-up service for specimens is also furnished twice weekly, thus making the use of this aid more convenient for the busy doctor. Slides are labelled, stained, and screened by the cytotechnologist and reports are mailed to the doctor. The patient receives a statement from the laboratory, and, in cases where the smear is negative, a mimeographed note which reads: "Your cell examination was negative. The next cell test should be done in one year."

A report of "Positive for malignant cells" is rendered when it is judged that the cells are of the type coming from the lesions of carcinoma in situ and invasive carcinoma; this corresponds with Papanicolaou's Class III, IV, and V. Smears are reported "Atypical cells present" when the degree of atypism is not sufficient for the "positive" category, but suggestive of the cells seen in the histological finding of epithelial atypism, dysplasia, or anaplasia. This corresponds to Papanicolaou's "Pattern of superficial and intermediate cell dyskaryosis". In this laboratory the diagnosis of "Atypical cells" is usually accompanied by the notation that it is advisable to have the patient return in three months for repeat smear. It is to be noted that this reading is somewhat more cautious than Papanicolaou Class III, but more demanding than his Class II. The reason for departing from the Papanicolaou class grading is that it was thought that the reporting would be better understood by the clinician unfamiliar with the Papanicolaou system. Also, it has been noted that there is some variation among cytologists as to just what a Class III diagnosis means clinically and histologically. This simplified reporting may or may not be justified by the test of time.

Results

From its inception July 1, 1958, to the end of the year, 1959, the laboratory processed 4732 vaginal cytological smears. There were 4596 negative, 102 atypical, and 34 positive reports. (Table 1)

Among the atypical smears there were 58 in which repeat studies were carried

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From the Cancer Detection Laboratory of the Woman's Hospital Foundation, Baton Rouge, La. This study supported in part by a research grant from the Cancer Association of New Orleans and Cancer Society of Greater Baton Rouge.

TABLE 1
DIAGNOSIS ON VAGINAL CYTOLOGIC TESTS REPORTED ON 4732 SMEARS, BY THE CANCER DETECTION LABORATORY OF THE WOMAN'S HOSPITAL FOUNDATION, BATON ROUGE, LA., JULY 1, 1958 - DECEMBER 31, 1959

No malignant cells seen	4596
Atypical cells present	102
Positive for malignant cells	34
Total	4732

out. Forty-seven were found to have no abnormal cells, 8 had a second atypical smear, while 3 were called positive on re-examination (Table 2).

Table 3 lists type of disease found in the 34 instances in which malignant cells were reported. Four patients had a cervical lesion suspected of being cancer,

TABLE 2
RESULTS OF REPEAT CYTOLOGIC EXAMINATION AFTER FIRST ATYPICAL IN 102 PATIENTS

Repeat examination positive	3
Repeat examination atypical	8
Repeat examination negative	47
No other examination	44
Total	102

TABLE 3
DISEASE FOUND AMONG 34 PATIENTS HAVING POSITIVE CYTOLOGY

Clinical carcinoma	4
Microscopic carcinoma	4
Recurrent carcinoma	1
Carcinoma in situ	14
Epithelium atypism	8
Total	31

4 others had a microscopically invasive growth, and 14 were found to have carcinoma in situ. One patient was discovered to have a microscopic recurrence after full radiation treatment. Eight instances of epithelial atypism were found to be the source of cells regarded as malignant.

Malignant disease was not found in 3 instances when the cytologic smear was reported as positive for malignant cells. Table 4 shows the tissue diagnosis in these cases. In 1 instance a positive smear was read as negative when the tissue study revealed adenocarcinoma of the endometrium (Table 5). Five positive cells or clumps were found on the slide upon review.

TABLE 4
DISEASE FOUND WHEN POSITIVE CYTOLOGY NOT SUPPORTED BY TISSUE STUDY

Cervicitis	2
Benign Endometrium	1
Total	3

TABLE 5
DISEASE FOUND BY TISSUE STUDY AFTER REPORT OF NEGATIVE CYTOLOGY

Adenocarcinoma of endometrium	1

Looking at the results of the cytologic screening, several questions may be asked: How many clinically unsuspected malignancies were there? Is there a practical reason to continue the "atypical" category? What uses other than screening may be accomplished by the procedure? What will be the long range effects of the continued testing of the women of this area?

From Table 3 it can be seen that there were 4 microcarcinomas and 14 carcinomas in situ which may fairly be counted pre-clinical. The exact significance of epithelial atypism is not known but currently it is thought to be at least a precursor of cancer, if not an actual step in carcinogenesis. The matter of spontaneous regression is not settled. Thus, there is considerable value in learning in which cervices this lesion is located.

The question of whether to report atypical cells will be more fully answered when the natural history of cervical cancer is finally understood. The fact that 2 patients had first an atypical and then a positive smear would seem to indicate that it is important to identify these smears. Each cytologist has his own conception of just how much atypism constitutes the diagnosis of "atypical cells". In a given series of smears, cells can be found exhibiting gradations of structure all the way from normal to malignant, and where to draw the line along this path of finely graded degrees of increasing abnormality may be a matter of opinion.

At least one other useful purpose is indicated for widespread application of the

cytological smear, that of detecting early vaginal or cervical recurrence of treated carcinoma. In the experience of the laboratory this use has been of value not only in the one instance where a microscopic recurrence did occur but also in a number of cases where negative smears have ruled out local recurrence.

Burns [2] has shown that the continuous operation of a community cytology program can change the major characteristics of cervical carcinoma disease in the community. It would not be too much to expect that the program of the Woman's Hospital Foundation could produce that effect also. The annual rate of occurrence of cervical cancer in East Baton Rouge Parish has been studied [3, 4] and it has been noted that there are some 30 new cases per year among local residents. The fact that 18 instances of early carcinoma have been found in a year and a half would certainly indicate that the continued detection of these curable lesions would soon lessen the number of clinically recognized malignancies in this same locality. One would seem to be justified in having a great deal of optimism for the long range outlook, particularly since it is probable that there will be further expansion of the use of vaginal cytology in the detection of genital cancer.

Summary

1. A community cytology program was instituted a year and a half ago, sponsored by the Woman's Hospital Foundation of Baton Rouge.

2. A Cancer Detection Laboratory furnishes the material with which each private physician prepares smears in his own office, the pick-up and delivery service for specimens and supplies, and the cytologic interpretation for vaginal cytological examination.

3. The laboratory has processed 4732 smears and found 34 positive among these. Eighteen subclinical carcinomas of the cervix were discovered in patients having positive smears.

4. There is reason to believe that the increasing and continued use of vaginal cytologic examination will bring about a lower rate of occurrence of invasive carcinoma of the cervix in the Baton Rouge area.

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Discussion

Dr. Cary M. Dougherty (Baton Rouge): There are several points bearing on accuracy of this method of examination which should be brought out. The laboratory rendered a diagnosis on every slide submitted. There were none reported as unsatisfactory. The small risk in this decision was accepted as a shortcoming of the cytological method. It should be noted, however, that finding no cells on a slide usually indicates that no abnormal cells are harbored by the cervix, since abnormal cells are easily removed by scraping. Second, in instances where the cytological diagnosis differs from the tissue diagnosis, it is not acceptable practice to write off the cytologic diagnosis as erroneous. Unless special precautions are taken in preparing the histological specimen a small carcinoma can be readily missed. These precautions include taking a large number of blocks and sections from well oriented gross tissue. Overall, the cytologic examination must be considered more sensitive than tissue examination as practiced in the average histopathological laboratory.

A fact which is more and more coming to light with the handling of many of these early lesions is that a microscopic focus of carcinoma cells constituting a microcarcinoma is not a serious threat to life as is the case with gross carcinoma. This is supported by observations that some tiny cancers can be cured by biopsy only; that sometimes an untreated small lesion on long follow-up will be seen to disappear from the cervix, either healed or regressed spontaneously; and that early disease has been known to remain in situ for many months without spread.

If cytologic examination lives up to present promise and if most cervical cancers do prove to originate in the early lesions we are now finding, then no claim will be too wild, no statement too exaggerated as to the great value of cytology.

Dr. Nelson D. Holmquist (New Orleans): Several points discussed in this paper bear emphasis.

It is not surprising that the one case missed in this cytologic program was that of an adenocarcinoma of the endometrium. Unfortunately, this type of tumor sometimes is not detected by the vaginal smear either because the tumor cells are not present on the slides studied or the tumor cells are not recognized because they may not have the bizarre features of cells of squamous cell carcinoma of the cervix. This was also the case in the study of Burns and Gorski mentioned by Dr. Griffon. They found in a nine year study of 29,687 women that 85 per cent of the carcinomas of the cervix were detected cytologically whereas only 49 per cent of the carcinomas of the endometrium were detected cytologically.

The real value of the cytologic technique was brought out here very strikingly in that eighteen cases of early carcinoma of the cervix, which clinically were unsuspected, were detected by cytologic examination. Through such early detection we may look forward to the possibilities of early diagnosis and treatment of this lesion.

The classification of smears which I employ differs somewhat from that described by Dr. Griffon and Dr. Dougherty but such differences should not create problems at the local level as long as there is a close liaison between clinician and cytologist.

Finally the study has emphasized the use of the technique as a means of *detection* of carcinoma and each case with an atypical or positive cytologic interpretation was followed with a biopsy for confirmatory diagnosis. Biopsy diagnosis should be obtained in every case with a questionable or positive cytologic interpretation before the patient's treatment is determined.

Letters to Young Physicians
By an Octogenerian

* * * Let me commence by hoping that your Diploma was given by an institution of high standing and strict requirements. I look with disfavor on the mushroom medical colleges springing up all over our lands. Hardly a small city of 25,000 inhabitants but must needs have its one, and in many cases two colleges, or diploma machines, as we may more properly call them. They are scarcely anything more than places for lazy men. A young man wants to practice medicine, but does not care to exert his worthiness and much indulged self enough to win a diploma from a college where requirements are strict. So he enters one of these diploma mills, is run through in the appointed time for so much. Out of a class, say of 190 men, 187 will pass at the first off and the other three will very probably get "a second showing," and receive a license to go out and murder—yes—that's the word—murder, for not only do they go out to physic human beings, knowing nothing of medicine, but ignorant of the first principles of anatomy and physiology, and they do all this willfully, and it shows how degraded the human heart can become, for they know that they will not be found out, or at least think so. Would one of them dare build a house, knowing no more of architecture and house-building than about medicine?

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Dignity in Death*
The Application and Withholding Of Interventive Measures

• A plea for comfort and relief to the dying patient—not euthanasia, but agathanasia.

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IN giant strides, we pyramid measures designed—so often successfully—to restore vitality and to prolong life. In the field of obstetrics we may intervene to facilitate birth; in attending the dying, we endeavour to deprive death of its victory. But in so doing, have we added to its sting? If not *euthanasia*, why not *agathanasia?*

Accounts of Death

Thirty years ago, during one phase of a rotating internship, I was alone in charge of a large chronic hospital with over a thousand patients. Rounds were attempted twice a day, an ambulatory chore of no mean accomplishment, for each performance took about six hours.

Fortunately for me, the charge nurse of each ward escorted me briskly through her particular area and would brief me on each patient as we passed. Stops were made for quick examination as she would indicate, or as my interest or attention was aroused, and suggestions would be made as my judgment and the nurse's more familiar understanding of each case required.

The evening hours were usually spent in examination of new admissions, usually the incurable patients referred by the several teaching hospitals of the city. That was discouraging enough.

But the nights—the endless nights of that three month stint—brought the hours of the interregnum of death. Each night saw one or several wheeled away, and I still vividly recall one night on which seven died, three in one ward. Beds one, two and four in that particular ward were emptied at one, two, and four in the morning. And as I covered up Mr. Four after determining death, the man in bed three remarked sleepily, "You're slipping, Doc, how come you missed me?"

With all the macabre tone this account holds, as I recall those early experiences now, I am obliged to admit that there was far more natural dignity and experienced gentleness in those deaths than is the rule in many general hospitals today. The nurse was in constant and comforting attendance, a few patients able to be up were close by, quietly ready to help if needed, and the few, very simple creature comforts were attended. Light was provided, borrowed pillows raised the head, a fan stirred the air unobtrusively, damp cloths kept face and hands moist, and quiet words, murmured and echoed around the bed gave the comfort of presence—and that was all.

Instruction comes back to me now from a senior instructor: "There comes a time when the only kindness left you can do, is give G.O.M." Grand Old Morphia—king in its day, is seldom used now as it was then, and both its purpose and dose then were to relieve distress, to comfort anxiety, to assure relaxation, and to prevent the anguish and torment of the final reflex convulsive transition.

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* Presented at the Twenty-Fourth Annual Meeting of the New Orleans Graduate Medical Assembly, March 6, 1961.

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Lord Horder it was, I believe, who said, "The physician has every obligation to prolong life, but he has no right to interfere with the act of dying". Trudeau observed, "We can cure sometimes, relieve often, but we can comfort always".

One night, not so many years ago, I experienced a night long vigil that left me shaken for days after. An elderly patient, senile to the degree of happy confusion, was slowly dying of the effects of a major stroke and paralysis of his left side. A fairly large carcinoma of the left temple was left alone, for it seemed to cause little trouble. But circumstances would have it that he developed an acute abdomen.

This tragic interlude posed an acute situation for me and for family alike. While I held out for medical management and expectant treatment, a son, who understandably felt this was a matter for surgical judgment, asked for consultation, and after two harrowing hours of conference and indecision, an exploratory operation was done, and a grangrenous, perforated appendix was exposed and removed.

The postoperative period was stormy at best. Constant nursing care was provided, all possible help was given, yet despite it all, he continued a downhill course.

The night referred to was his last night. I had been by several times, but could do little except try to comfort the relatives as he was obviously dying. On the last such visit, the son came from the room, and urged me inside. This scene met my eyes: The surgeon was doing a "cut down" to restart an infusion; the nurse with mouth gag and suction apparatus was aspirating secretions from the throat; while the patient, already deeply cyanotic, began to have a series of convulsions and died.

The picture of that moment remains with me, as I am sure it remains with the members of the family who were present, huddled in one corner of the room: They were barred from approaching the bed by oxygen tank, suction apparatus, tubes for suction, catheterization and infusion, as well as by those of the staff at the bedside who had completed the "cut down", and now were attempting artificial respiration.

But the patient was dead. He was 92.

Explanations and description followed. The probable causes of death were enumerated. Autopsy was requested, and was denied. As the family slowly left and started down the hall, the son was heard to say, "Those doctors sure tried everything they knew how, but gosh—didn't dad catch it awful".

That is their heritage and their memory.

By contrast, may I offer one other statistic. This patient was a 78 year old grandmother, who had had operative removal of a carcinoma of the colon a year before, and on re-hospitalization, was found to have generalized metastases. She suffered a stroke, with aphasia and right hemiplegia, and after available veins one by one had succumbed to the trauma of intravenous feeding, she was started on tube feedings. This situation was stabilized only after the good arm and leg had been restrained, and for several weeks slow decline persisted without any particularly notable event. She did moan constantly, and would point as best she could to the nasal tube and then upward. Two questions were asked, and each answered in the affirmative with vigorous nods: "Do you want the tube out and feeding stopped?" and the other question, "Do you want to die?"

Several times, as the restraints were changed, she would manage to get hold of the nasal tube and quickly snatch it out. But it would be re-introduced after a lively tussle.

One Sunday morning, on my rounds, I found the patient quiet, but obviously very low — almost moribund. Something had happened; something critical, most probably additional stroke, or perhaps hemorrhage into some metastatic area. She recognized me with a feeble nod, and as before tried to point to the nasal tube, her life-line, and then upward. I asked again the questions, "Tube out?" "Do you want to die?" Again she nodded to both.

The tube was removed, and the restraints untied. All other evidences of auxiliary help were taken away, and her understanding nurse went gently to work making her as attractive and comfortable as possible while I called the family and asked them to come at once. I also called the minister, and all arrived not long afterward.

The changed situation was explained, and my reasons for discontinuing all contrivances were given. The patient nodded approval to all I said, and with the good arm now freed, pointed upward.

Moderate sedation and analgesia were given as the cyanosis deepened. The minister gave a brief and beautiful prayer, and then one by one the family members with the nurse's direction, sat beside the patient's bed and each expressed love, and told briefly of some treasured memory. The husband was last. He took his place and leaned close to whisper. The patient smiled, sighed briefly, and died.

These two death-bed accounts, in my opinion, hold great significance. We are taught, properly so, to restore, to relieve, to prolong life to its richest and its fullest. But we learn only by death repeated over and over again, how to comfort and attend, in that time of great significance, the dying moments of our patients.

Moral Obligations

The word, *"euthanasia"*, is anathema to us. Yet it was an apt word at one time, for it meant literally, the good death. Unfortunately—it came to be applied to "mercy killing", to any positive act of interference or deliberate move designed to hasten death, or literally to put to death painlessly. Such is forbidden by conscience, by the ethics and morality of our profession, and by law.

Yet, in my opinion, I believe we have a moral obligation of the highest order, to attend our patients with skill, tenderness and constancy, while they are in the act of dying.

Most general practitioners are acutely aware that a great percentage of their bed-ridden, incurably wasting and terming homes. Most of us are by our middle and later active years so thoroughly familiar with the various manifestations of impending death that it is second nature to acknowledge its approach. We are the ones who get the familiar call from hospinally ill patients die at home or in nurstal or clinic, "Doctor, I'm sending you a patient. Everything possible has been done, and he's going downhill fast now. Will you look after him?"

So—he becomes our charge, our responsibility, and our statistic.

Care of the Dying

It has long been my contention that we should redirect our attention enough to grant that we need more early instruction in the art, and it is an art, of attending the dying; to attend with the realistic acknowledgement patients do die, and that we, of all people, while not omnipotent, can recognize approaching death far better than any except the older nurses, who, like us have seen death so often.

It is repetitious to say that medicine has advanced tremendously. We have operations that are brilliant and daring. Ingenious prostheses can do everything but bleed and sweat, and for all I know can do even that. Hearing aids, artificial kidneys, heart valve replacements and even miniature embedded pace-makers are well known. The multiplicity of such advances is legion—and it seems that with the rapidity that innovation, refinement and substitution is taking place, we are just getting started. New specifics also are achieving meritorious recognition.

With life-expectancy lengthening, death is being pushed further and further away. Yet—it is still as true as in the beginning; we are born to die, and die we must.

Since this is so, and since the dignity of the individual is cherished by our culture, should we not be the ones to say, "As birth and life are within our province of care, so is the responsibility of caring for the dying." And this, not with the air of one who tries to "play God", but with our known and shared art of the care of the dying, to develop and exchange

ideas of procedure, drug administration, and other niceties of medical care, continue to serve the dying faithfully and well.

Research must and will continue to amaze and stimulate us. We can do no less than to devise or require that those who attend the dying patient learn as an individual and expanding art those procedures best to relieve and to comfort him that he may go his way with dignity, and with a cherished memory left behind to sustain and ennoble the lives of those who follow.

May I suggest a name for this performance; for this ministry of medicine as a terminal service: *Agathanasia* — A good death, or a death with dignity.

Editorial Department

* * * Dr. D. C. Holiday of this city has been striving for several years to organize a school for training nurses in New Orleans. It may be that some others have enlisted their names and influence on his side of this question, but we do not know this to be the case. On the contrary we have heard that there is much opposition to the establishment of such an institution. Exactly where, or why this opposition has sprung up, we are not able to state explicitly. We also believe that it would do nothing in the way of effecting its removal to publish expressions implying a suspicion as to the seat and causes of the opposition.

There are few cities in the world where the skillful and methodical training of nurses is more needed. The blessings of thousands of rescued lives would, in process of time, accumulate around a well conducted training school here, and sanctify its estimation by every philanthropist in the country. Here, we have ample opportunities to train as nurses persons acclimated to Yellow Fever, who would be ready to go to any part of the country where their services were required.

New Orleans M. & S. J. 8:467 (December) 1881

Bronchial Asthma*
(Practical Points for its Management)

• Practical points for good allergic history taking; evaluation of points of importance in physical examination. What laboratory and allergy studies are helpful when; helping hints for therapy, listed both by basic principles and a specific example; prognosis and complications.

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Introduction

FEW areas in medicine reward your skills and efforts of careful diagnosis and management more than the treatment of bronchial asthma. While in many other medical subspecialty areas little can be modified by effort, due to the nature and unalterability of the disease, the outlook in the management of asthma is very bright and encouraging.

Diagnosis

Bronchial asthma is an allergic disease, clinically characterized by wheezing, physiologically by diffuse airway obstruction, the symptoms of which are *reversible* on treatment.

The definition, as given, requires an antigen-antibody mechanism to be operative and excludes, therefore, nonallergic other causes of wheezing. Wheezing, or diffuse airway obstruction, which is irreversible, is termed pulmonary emphysema, in which allergic mechanisms play no role. Bronchial asthma is temporary and "reversible pulmonary emphysema". Permitting this reversible situation to remain symptomatic, be it by procrastination, lack of knowledge or prejudice against hyposensitization, will eventually lead to "irreversible pulmonary emphysema", usually referred to as diffuse obstructive emphysema. It is this latter complication, which is to be avoided. We classify bronchial asthma as either extrinsic or intrinsic. (Table 1)

Nonspecific factors, such as emotional stress, physical stress (cold weather, irritative dusts or smokes, odors, humidity, air pollution, etc.), infections, endocrine factors (pregnancy, menstruation), and other nonrelated diseases can either trigger off latent or subclinical asthma or significantly aggravate mild bronchial asthma. They, by themselves, do not cause bronchial asthma, which, by definition, requires the presence of an underlying immunological mechanism.

The term status asthmaticus is applied to persons with severe symptomatic bronchial asthma, who have failed to respond to simple bronchodilator therapy. As the treatment of extrinsic bronchial asthma differs considerably from that of intrinsic asthma, this ability of classifying asthma has considerable practical merit. It is true that neglected extrinsic asthma sooner or later acquires a secondary intrinsic component due to later acquired bacterial hypersensitivity, so that this clear separation is not always present in severe, long standing asthma, so called "mixed extrinsic and intrinsic bronchial asthma."

1. Practical Points for Good Allergy History Taking

Of all diagnostic methods, a careful and very detailed history, is by far the most important single diagnostic tool. Especi-

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TABLE 1

	Extrinsic bronchial asthma	Intrinsic bronchial asthma
Antigen	"Extrinsic", coming from the outside of the body, such as house dust, pollens, molds, animal danders, etc.	"Intrinsic", coming from within the body, usually a bacterial, viral or fungal antigen.
Antibody	Circulating, in the serum, but with affinity to fix itself to tissue cells (also called reagin or skin-sensitizing antibody).	Cellular, in mononuclear white blood cells, not present in the serum.
Pathology in bronchial walls	Edema first, cells later.	Cells first, edema later.
Mode of onset of clinical symptoms	Quick and sudden (within hours).	Slow and insidious (within days).
Response to bronchodilators	Quick and dramatic.	Slow and minimal.
Positive family history for allergic disease	Usually yes (atopic individuals).	Usually no (non-atopic individuals).
Usual onset	Early in life (childhood onset).	Late in life (adult onset).
Candidates for Hyposensitization	Yes (creates an artificial protective blocking antibody which competes for the offending antigen and disposes of it without the usual clinical disease).	No (except with bacterial antigens, the use of which is empiric and controversial).
Principles of treatment	Combat the histamine-like effects of increased vascular permeability, edema and bronchospasm, which resulted from the antigen-antibody reaction of the immediate type.	Combat the effects of a mononuclear cell inflammatory response to a bacterial or other "delayed type" antigen.

ally in extrinsic bronchial asthma, the knowledge of the various pollination and mold spore seasons will come in good stead. Simplified they are as follows:

Eary spring
Tree pollination

Late spring and summer
Grass pollination

Late summer and early fall
Weed pollination

Early spring to late fall
Atmospheric molds

Winter
House dust contact more intensive

Winter, or all year
Environmental molds

May to September
"X hayfever"

In a more graphic description, this is depicted for Louisiana in Figure 1.

Pollination requires dry and sunny weather; no pollen is in the air when it rains. It is of help, therefore, to establish, if symptoms are worse on a clear and sunny day or on a cold, damp and muggy

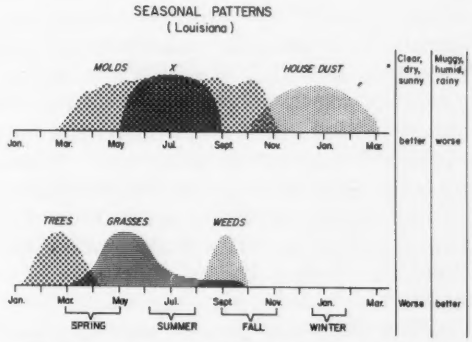

Figure 1. Oversimplified schematic pattern of seasonal incidence of various inhalant factors of extrinsic bronchial asthma.

day. It is true that mold allergic patients are usually worse on such damp and overcast days. As the body of knowledge, concerning the biologic behavior of the various molds, is much more sparse than that with conventional pollens of trees, grasses, and weeds, further knowledge and research in the field of mold allergy is the most pressing problem in Louisiana; especially for the low-level swamp and bayou country of southern Louisiana, mold aller-

gy is the most frequent cause for extrinsic bronchial asthma. This is not generally recognized. There are at least 30 clinically significant mold antigens.

Although theoretically the onset of an asthma attack at night in the bedroom would point to environmental factors such as house dust, pillow feathers, animal danders or environmental molds, such behavior is also sometimes seen in cases, caused by agents clearly coming from outdoors, such as grass pollen. The fact that air conditioning helps the patient suggests an atmospheric factor such as pollens, the unknown x-factor or the atmospheric molds.

Seasonal inhalant asthma is sometimes hard to distinguish from a seasonal food. It is theoretically possible that a strawberry food sensitivity might fall into the time of pecan or oak pollination. At times it is difficult to decide if asthma is caused by a general atmospheric antigen or a local factor of a particular environmental mold in a particular home. Before proceeding with ill-advised recommendations to move to a different climate, it is of decided merit to have the patient try to live for a week each in 3 to 4 different homes in the same geographic area. The trouble may be limited to one single home and not be present in the other ones.

Things which encourage environmental mold infestation in homes, are leaky roofs, leaky basements, leaky walls, wallpaper covers, in short anything which permits humidity to become a greater factor. As a rule of thumb, a patient with any environmental mold allergy is usually more comfortable the higher off the ground floor level and the drier his particular room happens to be.

The importance of house dust factors, such as mattresses, upholstered furniture, curtains, chenille bedspreads, cannot be underemphasized. Very often one gets a history of no trouble outdoors during the day, but the wheezing occurs after a few hours back indoors. As people spend more time indoors in cold weather, as ordinary forced air heat ventilating systems do their best, to spread the dust around further, patients with dust allergy have more symptoms in the winter. Radiant heat or any other heating system, which does not require continuous air movement, has a decided advantage over forced air systems.

One should realise here, however, that dust hyposensitization is one of the easier and elegant forms of treatment, which yields the best results, compared to any other antigens such as pollen or molds. After 6 to 10 injections it is rarely necessary to be very strict and careful about dust hygiene measures, as the dust injections have remedied the problem effectively.

No matter, if one patient is at present clinically allergic to dog, cat or other animal danders or not, an asthmatic patient plays with fire, in permitting himself exposure to any highly antigenic animal dander. Never forget, in history taking, nonspecific factors such as smoking or possible drug hypersensitivity, such as phenolphthalein or aspirin. In the latter two, as with any ingested antigen, it is not only important to relate if they are associated with asthma attacks, but also what the time interval is between ingestion and symptoms. Milk serves as an example. If symptoms occur immediately after ingestion, the patient is allergic to milk as such. Skin tests would be positive to milk in this case.

On the other hand, symptoms may occur three or more hours after ingestion of the causative food, such as milk. In such cases an intradermal test to milk might be negative and one would have to test with the digestive product of the milk, namely milk proteose. Another clue in sensitivity to drugs given in tablet form, is the fact, that the patient may not be sensitive to the drug at all but to the tablet filler substance, such as karaya, gum acacia or gum tragacanth. Some of my patients tolerate liquid preparations of aspirin or chloromycetin, but not when they are given in tablet or capsule form.

The previous discussion dealt primarily with clues to arrive at certain specific antigens. If asthma has been of sufficiently long standing, a perennial pattern at

present will make it impossible to arrive at single factors. This may be true now, but was this the case at the onset of the asthma?

One should then pay particular attention to the behavior and circumstances of the asthma, when it first started. Did it first occur suddenly on a clear sunny day in September? How did it first respond to treatment? The importance of associated allergic complaints, such as nose itching, nasal blockage, rhinorrhea, generalized pruritus, skin allergies, should not be ignored in history taking.

Another frequent source of confusion, especially in the pediatric age group, is the problem to decide if one deals with an allergic problem or a respiratory infection. The dust allergy may be subclinical and unimpressive by itself, only to attract attention when the minimal dust rhinitis, with decreased nasal tissue resistance, has led to clear febrile and purulent respiratory infections. If one obtains a history suggesting three attacks of "pneumonia" each winter, and never any attack in the summer, this suggests the need to search for an underlying seasonal allergic factor. House dust sensitivity is a common one. It is undisputed, that effective house dust hyposensitization reduces the number and severity of upper respiratory infections, per winter, in such patients.

Another problem in history taking is to decide when one deals with intrinsic bronchial asthma and when with pulmonary emphysema. The former usually leads to the latter, and it is rare to find pure intrinsic asthma with no associated pulmonary emphysema. If patients with this general type of problem begin to wheeze more, it is hard to decide if this is due to the actual infection or due to the bacterial hypersensitizing response to the bacterial antigen. The slow and insidious onset of wheezing sets these asthmatics apart from those with sudden onset due to extrinsic bronchial asthma. These people with intrinsic bronchial asthma are the ones who may give you a history of "adrenalin fastness" and poor, slow or no response to bronchodilators. They may "wheeze all the time". Not a single moment may be there of a completely asymptomatic day. The onset of asthma usually, although not always, occurs late in life, and is usually ushered in by a febrile disease such as pneumonitis, pertussis, or a paranasal sinusitis. The family history need not be positive, while it is nearly always positive for allergic disease in extrinsic asthma. Neglected extrinsic asthma of long standing may eventually lead to mixed type (extrinsic and intrinsic) asthma due to a superimposed bacterial hypersensitivity.

If one obtains a history of patients having been in severe "status asthmaticus", this suggests that intrinsic factors of bacterial hypersensitivity must play a part, in most cases, as extrinsic asthma usually responds so nicely to bronchodilator medication.

2. Points of Importance in the Physical Examination

A patient with one single atopic disease (atopic = in which there is a positive family history of allergy) usually shows physical findings not limited to the main disease under study. Extrinsic asthma can best be viewed as one manifestation of a generalized systemic disease, which usually shows also other manifestations, such as a pale boggy nasal mucosa with or without polyps, with or without airway obstruction. A healthy or hyperemic nasal mucosa, in the absence of an acute infection, nearly always rules out the usual extrinsic asthma. Movement of the alae nasi suggests nasal blockage. Nasal patency is also checked by holding a piece of paper in front of the nostrils checking its movement. The conjunctivae may suggest the presence of injection and inflammation, with or without associated swelling of the eye lids. Repeated styes, recurring each year at a certain time, necessitate the search for allergic seasonal factors. Long standing allergic disease may lead to pale hypertrophic tonsils and adenoids, with or without Eustachian tube blockage, leading at times to hearing impairment and retracted ear drums.

Bilateral cervical lymphadenopathy suggests in an indirect way presence of long-standing underlying allergic disease, although obviously it may suggest many other things, such as chronic infection.

In the examination of the chest, the impression of an increased AP diameter is frequently misleading. A more reliable assessment of chest dynamics is the tape measurement of chest circumferences at the extremes of both expiration and inspiration. An excursion difference of 5 cm. between these two measurements is normal in adults. Decrease of this difference is a more reliable sign of lung hyperinflation than the AP diameter. It is of importance to evaluate other signs of emphysema such as the range of diaphragmatic excursions, by percussion. The need to detect other types of organic chest disease by inspection, palpation, percussion and auscultation is obvious. The occurrence of asymmetric wheezing should lead one to search for causes of airway obstruction other than asthma, such as a foreign body, an endobronchial obstruction, etc. If this obstruction is pendulous, positioning the sitting patient to the right and left, back and forth, may increase or decrease the wheezing in a patient, respectively.

A very common error results from the absence of audible expiratory wheezes on quiet breathing, in a chest, which appears silent due to "poor air entry". This means that the bronchial obstruction is so severe, that air flow via the obstructive site is not sufficient to produce a noise. Every patient, suspect of bronchial asthma, must be listened to on *forced* expiration, to detect wheezes, which otherwise would have been missed.

The examination of the heart centers primarily around the evaluation of pulmonary heart disease, detecting the presence or absence of right ventricular hypertrophy and comparing A_2 with P_2.

The skin in an atopic patient may show old areas of mild atopic eczema in the flexor surfaces of the extremities, the existence of which is usually not volunteered by the patient's history. Signs of excoriations over the part accessible to the scratching fingers, may suggest that the patient suffers from generalized pruritus, which may or may not be the result of a generalized histaminemia, due to release of histamine by antigen-antibody mechanisms. At times urticaria and angioneurotic edema is observed as are all types of allergic skin rashes, on the trunk or extremities. A rash under the nose is observed in severe allergic rhinitis, due to the irritation by the nasal secretion. Slight hyperemia on the flares of the nose is also at times observed. Circumoral rash or pruritus, palatal itching or similar signs around the anus, suggest food allergy.

In respiratory allergy one must evaluate the paranasal sinuses both by percussion and transillumination.

3. Laboratory Studies

One should have made the diagnosis after a careful history and physical examination, so that laboratory studies are sheer embellishments which at times render little additional value. The examination of nasal smears for eosinophils is viewed somewhat in this fashion, as is the examination of the sputum for Charcot-Leyden crystals and Curschmann's spirals.

Studies, to decide on the presence or absence of infection are important, such as the white blood cell count, differential blood count, the sedimentation rate and bacteriological studies of the sputum, throat, nasopharynx, maxillary sinus and other sources of infection, with immediate gram stain and with or without drug sensitivity studies. Of particular importance is the following of the peripheral blood eosinophil count, in a patient with bronchial asthma. In extrinsic asthma eosinophils are either normal or slightly elevated, while eosinophilia is more impressive in intrinsic asthma. The increase of eosinophils over a period of observation, is a poor prognostic sign in asthma. It means that bacterial hypersensitivity has occurred in a patient previously only sensitive to treatable extrinsic allergens. It may also mean periarteritis nodosa,

which is very frequently associated with asthmatic wheezing, or it may suggest hypoadrenocorticism. Other causes for eosinophilia must be ruled out.

Pulmonary function studies serve a very useful role in determining the reversibility of the airway obstruction. The determination of vital capacity and maximal breathing capacity, before and after bronchodilators is commonly referred to as a double spirogram. The greater the improvement on bronchodilators, the more favorable is the prognosis for treatment, while lack of good response to bronchodilators suggests intrinsic bronchial asthma, a superimposed infection or diffuse obstructive emphysema (see figures 2 and 3).

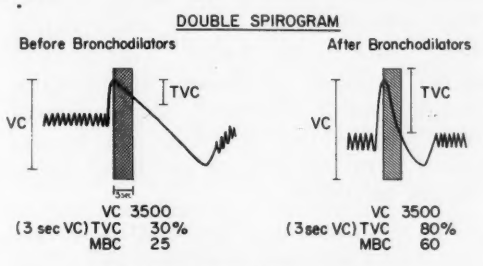

Figure 2. VC Vital Capacity
TVC That percentage of the total vital capacity, expired after three seconds.
MBC Maximal Breathing Capacity

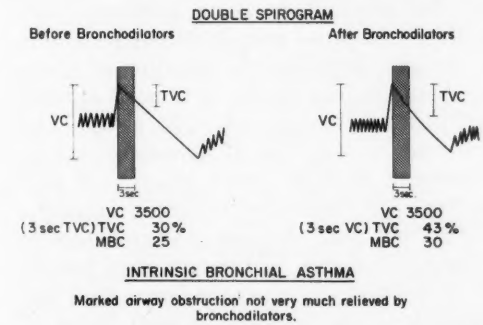

Figure 3. For explanation, refer to footnotes below Figure 3.

4. Allergy Studies

This should be considered only final proof. Procedures, after a good history and physical examination have already made it obvious what the offending antigen should be. Tests with antigens are:

1. Intradermal skin tests
2. Scratch skin tests
3. Patch skin tests
4. Conjunctival tests
5. Aerosol Inhalation of Antigen
6. Elimination diet and provocative trials.

Allergy skin tests are only performed in extrinsic asthma. If we do note a poor response to bronchodilators, which to us means primarily intrinsic asthma, we feel the effort of skin testing unwarranted, as hyposensitization therapy benefits only extrinsic asthma. In this area, in general practice, seven skin tests with antigen mixtures might serve as a practical screening procedure to delineate the basic problem: house dust, mixed trees, mixed grasses, mixed weeds, mixed atmospheric molds, mixed environmental molds and mixed animal danders. These skin tests can be performed by the scratch or intradermal method. A routine skin test strength would be 100 protein nitrogen units per ml. for intradermal testing, while stronger concentrations are used for scratch tests.

In young children where injections are feared, one antigen at a time can be tested on the conjunctivae, or a regular passive transfer test can be performed using a nonallergic donor, on whose back the reactions between the child's serum and antigen are read. Any skin tests should be done on extremities, preferably, so as to be able to apply a tourniquet proximally in case of constitutional reactions.

5. Helpful Hints for Therapy

The treatment of bronchial asthma can be categorized into ten treatment principles.

(A) Interfere with antigen - antibody mechanism by:
- (a) Removing or reducing exposure to antigen
- (b) Destruction of antigen
- (c) Modifying antibody response
- (d) Decreasing antibody formation

(e) Interfering with antigen-antibody mechanisms without changing either amount of antigens or antibody.

(E) *Combat bronchospasm* (bronchodilators).

(C) *Combat bronchial secretions.*

(D) *Combat apprehension.*

(E) *Combat dehydration.*

(F) *Combat superimposed infection.*

(G) *Combat hypercapnia.*

(H) *Combat hypoxia.*

(I) *Combat respiratory acidosis.*

(J) *Mechanical aids to respiration.*

A. Interfere with antigen-antibody mechanisms

(a) *Removing or reducing exposure to antigen.*

Removal of the offending antigen, both in short-term or long-term therapy appears by far the most optimal form of therapy. In extrinsic bronchial asthma, house dust control measures are an example as is the covering of pillows and mattresses. The removal of animal pets from the patient's home is a must. If the offending antigen is an environmental mold, this may be present in one home and not another. The change of homes, on a trial visit basis, would clarify such problems. If the antigen comes from outdoors, air-conditioners, filters and electrostatic precipitators have some value in reducing the extent of indoor pollen concentration. In severe cases, the temporary move into a pollen-free area will be effective.

If foods happen to be the offending antigens, their removal from the diet will be necessary, provided it could be shown that readministration of the suspect food indeed caused a flare-up of the asthma. In intrinsic asthma, the avoidance of infections or the effective treatment of infections present, by antibiotic and other measures, will be discussed under item 6.

(b) *Destruction of antigen.*

Enzymatic destruction of an antigen, such as the destruction of circulating penicillin by penicillinase, as yet is unavailable for the common offending antigens. This form of treatment has no practical value in bronchial asthma.

(c) *Modifying antibody response.*

The creation of an artificial "blocking antibody", which competes with the reagin or "skin-sensitizing antibody", is the rational basis of *hyposensitization therapy,* using extracts of the antigen etiologically incriminated. Such treatment offers little help in acute asthma, but is of utmost value in the long-term treatment of extrinsic asthma, due to dust, pollen or mold sensitivity.

Hyposensitization injections are given by the co-seasonal, preseasonal or perennial method. In the *co-seasonal technique* small skin-test size doses are given daily intradermally during the active season. This method is cumbersome and requires daily visits to the doctor. This method alone, without combined symptomatic therapy, rarely completely abates clinical symptoms, while the latter can be expected if pre-seasonal or perennial methods are employed.

The *pre-seasonal method* starts in ample time before the onset of a particular pollen season, so that a protective level of blocking antibody will have been reached before the expected onset of clinical symptoms. If this maintenance level injection is repeated once a month throughout the year, or more often, if symptoms warrant it, this is referred to as *perennial method.* As the level of blocking antibody falls without continued stimulation by parenteral antigen stimulation, cessation of therapy usually will lead to return of clinical symptoms, although not right away. The criteria for cessation of hyposensitization treatment is three years absence of any asthma, on hyposensitization treatment. Eighty per cent of cases of pure extrinsic bronchial asthma, will obtain good results from hyposensitization therapy. Oral hposensitization therapy has been found of some value in children. The administration of increasing amounts of antigen in a gelatine capsule or as drops in water, has been employed. Some reactions, due to a gastrointestinal reaction to the anti-

gen, have been observed. Modifications of the hyposensitization treatment are being sought to reduce the number of injections required to obtain adequate clinical protection. The recently popularized "one-injection method", utilizing a repositary form of ragweed extract, merits further careful attention. These methods have in common the attempt to delay absorption of the antigen. Mineral oil, tannate and other adjuvants are being studied for their incorporation into a ragweed-extract emulsion with them.

Hyposensitization therapy is of no value in pure intrinsic asthma except for the possible value of either autogenous or stock respiratory bacterial vaccines. Their use is empiric and controversial. Commercial products, such as Immunovac® Respiratory Vaccine (Parke-Davis) and untold others, should be subjected to a critical trial. If used, the start of 0.1 ml. of a 1:10 diluted vaccine, is a usual starting point, although sometimes much higher dilutions are required. Although the use of these vaccines is controversial, the deliberate provocative injection of 1 cc. of undiluted bacterial vaccine causes at times a very severe asthmatic attack twenty-four to forty-eight hours after injection to a completely asymptomatic patient, thus establishing beyond a doubt that such patient has bacterial allergy. Such procedure should only be done by experienced allergists as it is potentially dangerous.

The use of prophylactic vaccines against all strains of influenza virus, including the Asiatic strain, adenovirus and others to be developed, is indicated for any long-standing asthma, especially those with primarily an intrinsic component.

(d) *Decreasing antibody formation.*

Although large doses of corticotropin (ACTH) and corticosteroids, if given prior to exposure to antigen, inhibit antibody production, employment of this principle of decreased antibody formation has only theoretical value, with the following exceptions: In patients with agammaglobulinemia and hypogammaglobulinemia there is congenital or acquired inability to form circulating antibody. No allergic reactions of the immediate type are therefore theoretically possible although their ability to form cellular antibody of the delayed-type appears unimpaired. The exact opposite is observed in patients with Sarcoidosis and Hodgkin's disease.

(e) *Interfering with antigen-antibody mechanisms without changing amount of either antigen or antibody.*

The union of antigen and antibody requires the presence of *complement* and perhaps essential ions such as magnesium and others. The presence of a "first antigen-antibody reaction", such as for example, an overwhelming infection, may temporarily protect against allergic disease of an unrelated "second antigen-antibody reaction", for which complement is less available. This is but one theoretical mechanism why infections sometimes temporarily ameliorate especially extrinsic bronchial asthma rather than aggravate it.

Histamine-like substances are the consequence of an antigen-antibody reaction. Drugs, such as antihistaminics, adrenalin, and other sympatheticomimetic drugs block the effects of them. Antihistamines were thought of no value in acute asthma, in fact their use seemed contraindicated, because of the atropine-like drying effect on the bronchial secretion. Recent work on Tedral-Anti-H suggests its superiority over plain Tedral, especially in the prevention of oncoming attacks. Although their use alone provides no relief in acute asthma and is contraindicated in severe asthma, their use in conjunction with bronchodilators merits a trial. I suggest the use of a long-acting antihistaminic at night time, together with liberal aminophylline, for such cases. Teldrin® 8 or 12 mg. or Di-Paralene® are few examples of many of this group.

The inflammatory mononuclear cell response of intrinsic asthma is suppressed by anti-inflammatory compounds such as ACTH, corticosteroids and nitrogen mustard. The latter is not used for the treatment of bronchial asthma. *ACTH and steroids* are to be used as desperate last-ditch measures, after any efforts of ther-

apy have failed. Since the advent of these drugs the mortality due to bronchial asthma has increased, many undesirable complications have occurred, such as diabetes, peptic ulcer, psychoses, hypertension and the like.

B. **Combat Bronchospasm.**

In mild asthma oral aminophylline tablets, either plain or enteric coated, are quite satisfactory. Aminophylline 100 mg. or 200 mg. tablets are given three times a day, preferably after meals, to reduce gastric irritation, which is observed as a common side effert, especially if given on an empty stomach. A liquid theophylline preparation, Elixophylline®, enjoys considerable favor, as it permits quicker absorption, quicker blood levels and less gastrointestinal distress. The dose of 15 ml. t.i.d. p.c. and 15 ml. at bed time is an average adult requirement, with half of the dose for children from five to fourteen years of age.

Choledyl (choline theophyllinate) 200 mg. t.i.d. p.c. is another oral tablet medication for the same purpose. Aminophylline can also be given in many combinations, with ephedrine and barbiturates added, the latter to overcome the CNS stimulant effect of ephedrine. Tedral®, Amodrine®, Amesec® are examples of such triple combinations. Ephedrine sulfate, in 24 to 48 mg. capsules, can be given alone. It is effective in mild asthma, but has side effects such as depression of appetite, if given before meals, CNS stimulation and interference with sleep, if taken too late in the afternoon. Slightly more effective, but with more side effects such as overstimulation and tachycardia are Isuprel® and similar compounds, which are given sublingually. The dosage of 10 mg. t.i.d. of Isuprel® for adults is average.

Bronchodilator medication can be combined with an antihistaminic. Although there are theoretical objections to the use of antihistaminics in symptomatic asthma (antihistamines have an atropine-like effect, leading to inspissation of mucus), recent controlled studies suggest that such compounds (as for instance Tedral-Anti-H) are superior over plain bronchodilator combinations without antihistaminics (as for instance Tedral). It probably is wise, however, not to employ antihistaminics in very severe bronchial asthma where inspissation of mucus might be a more dangerous factor. These bronchodilator-antihistamine combinations also have a place in the prophylactic sense, especially in the pediatric age group.

The compounding of a capsule, containing each ephedrine sulfate U.S.P. 25 mg., Aminophylline U.S.P. 100 mg., Phenobarbital U.S.P. 15 mg. to be given t.i.d. or q.i.d. may be less expensive than the use of pre-made registered trade items. Bronchodilators, in more severe cases, can also be administered by vein, intramuscularly, subcutaneously, by nebulizer inhalation either plain or with intermittent positive pressure or by rectum. Intravenous Aminophylline, either 250 mg. or 500 mg., in 10 or 20 ml. volume or in 500 to 1000 ml. of an intravenous solution such as 5 per cent dextrose in water, or physiological saline, or others, is a most superior drug. In small volume, it must be given not faster than 1 ml. per minute to avoid intravenous speed shock. Aminophylline can also be given rectally, either as Aminophylline Rectal Supositories in 250 mg. or 500 mg. There is a significant qualitative difference from one manufacturer of suppositories to another, due to their using suppository bases, more or less irritative to the rectal mucosa after prolonged use. A ready-made "enema-unit", Clysmathane®, is a more expensive but more satisfactory form of aminophylline therapy, one such rectal unit to be inserted into the rectum each night. Aminophylline can also be given as a retention enema (Aminophylline 500 mg. in 20 cc. per enema). As most of the asthmatics have symptoms late at night or early in the morning, bronchodilators with delayed action should be prescribed at bedtime. Enteric coated Tedral or Aminophylline are such choices, in addition to rectal medication, as described above.

The intramuscular or subcutaneous administration of aqueous Adrenalin 1:1000

in doses between 0.15 ml. to 0.60 ml. is potent, but has more annoying side effects than that due to intravenous Aminophylline, but the latter requires a physician for its administration. For prolonged Adrenalin effect Adrenalin in oil 1:500, 1 cc., can be administered, but "Sus-Phrine", in doses between 0.2 to 0.6 ml., accomplishes the same in more elegant fashion.

Using a good nebuliser, such as DeVilbiss No. 40 or 44, a Vapo-Nephrine nebuliser or others, either operated by hand pump, an air compressor motor, and oxygen or compressed air tank, with or without an intermittent positive pressure unit attached, bronchodilator aerosol treatment is most effective. For this the aerosolization of 10 drops of Adrenalin 1:100 in 10 drops of normal saline suffices for an average treatment of fifteen to thirty minutes. Isuprel 1:200 or Aerolone® may be substituted for Adrenalin. The treatments may be given every two hours to four hours.

C. **Combat Bronchial Secretion.**

Everybody uses a saturated solution of potassium iodide, 10 drops in water t.i.d. p.c., if inspissated secretions are a factor. Whether or not this actually liquifies the sputum, is controversial. Equally controversial is the inhalation of Tergemist® and Alevaire®, as advocated in many centers. Cold or warm continuous steam inhalations are probably equally effective without leading to side-effects of iodine administration, referred to as iodism, such as acne, parotid gland swelling and thyroid dysfunction. Potassium iodide can be given in tablet form. One tablet of KI-N equals ten drops of the above solution, probably eliminating the metallic taste of the latter. Drugs such as Mudrane® and Quadrinal®, contain the triple effect of Aminophylline, Ephedrine and Phenobarbital, together with potassium iodide. Ammonium chloride tablets, 300 or 600 mg. 3 times a day, are given occasionally as an expectorant, as is Syrup of Ipecac U.S.P. 4 cc. every thirty minutes until the pre-nausea stage.

A new approach for combatting thick viscid secretions is that of enzymatic debridement of fibrinopurulent and mucus bronchial secretions. The buccal administration of one tablet of Varidase Buccal®, four times a day, for five days, is valuable. Also valuable is pancreatic dornase (Dornavac®) in 1 ml. saline, daily for seven days. The latter drug can also be given intramuscularly, or intravenously 1,000,000 units once or twice daily. In case of extreme airway obstruction with inspissated secretions causing atelectasis, therapeutic bronchoscopy on an emergency basis should be employed. If secretions are liable to recur shortly, a tracheotomy may be necessary in extreme cases.

D. **Combat apprehension.**

At times, the fear and anxiety are worse than actual impairment of pulmonary ventilation. Sometimes the patient requires sedation, while at others, the parents of asthmatic children require it more. The simple expedient of putting a patient to bed in a single quiet room, without any visitors, may do the trick, in an acute asthmatic. When indicated, long term sedation by Phenobarbital, 15 mg. q.i.d., tranquilizers or combinations of them with other drugs, are useful. For severe acute asthma, 25 mg. or 50 mg. of oral or subcutaneous Demerol® is most effective without considerable respiratory depression. Many other sedative drugs are available.

The most important, although most forgotten item is that of the presence of a mature sympathetic and confidence-in spiring physician, both in the acute as well as the long term management of apprehension. On the other hand, psychoanalysis and other less superficial forms of psychiatric treatments, create results, not well correlated with their expense and consumption of time. They may be indicated for the patient as a whole, but not specifically for his problem of bronchial asthma.

The use of morphine is definitely contraindicated, due to its depressive effect on respiration. In severe cases, equal

parts of 60 ml. each of ether and olive oil may be given by rectum. Ether anesthesia may be tried in extreme cases.

E. Combat Dehydration.

The presence of severe bronchial asthma over prolonged periods of time may be associated with more or less severe dehydration, especially in children. If at all possible, such dehydration should be corrected by the oral route, either by plain drinking of fluids such as water or fruit juices, or by intubation into the small intestine or stomach. In the latter the definite complication of aspiration pneumonitis is ever present. Fluids can also be given subcutaneously by hypodermoclysis with or without Hyaluronidase added to the needle site. This latter may be a practical way to administer fluids to adults and children, using about 10 ml. per pound of body weight of 5 per cent dextrose in water or normal saline, if there is no contraindication to the latter. Finally, solutions can be given intravenously, alone or as a vehicle for other symptomatic drugs and multiple vitamins, if such are indicated. The prevention of excessive perspiration, on hot days, is a further measure in combatting dehydration.

F. Combat superimposed infections.

The lack of recognition of an infection as a primary or secondary factor is the most common factor, which accounts for the progression into severe status asthmaticus from simple uncomplicated asthma. This infection is usually an upper or lower respiratory infection, although focal infections in distant organ sites, frequently nonsuspected, at times are very important to cause or flare-up an acute asthmatic episode.

Sites to be examined are the paranasal sinuses, a possible apical tooth abscess, the gallbladder, the prostate gland and many other foci. These foci may aggravate the asthma by its ability to set up a cellular antibody-antigen reaction (the antigen being the bacteria, the antibody carried in the circulating lymphocite) rather than by their effects as purely infective agents. Nonpathogens, therefore, are equally as important as known pathogenic offenders.

The criteria for the use or non-use of antimicrobial therapy require considerable judgment. At the onset, proper bacterial, viral, fungal, or parasite studies need to be made of the respective organ sites to delineate the etiologic problem. As stated, it is not necessary that the obtained culture material has to belong to the group of known pathogens. Sensitivity studies are then in order, although the correlation between in vitro sensitivity between organism and antimicrobial is not necessarily established with its behavior in vivo. If one were to wait for a sore throat and fever as the criterion for the beginning of antibiotic therapy, one would probably fail to treat many less obvious infections in the chronic asthmatic. The change of character of the sputum from a clear white to that of a purulent yellow may be an important help, to recognize a superimposed infection. More has been said concerning the infections in their role as acting as cellular delayed-type antigens.

The choice of the proper antimicrobial agent is either indicated by sensitivity studies or by the knowledge of the known preference of a drug for a known organism. It is accepted as a calculated risk that allergic reactions to any of the employed antimicrobial drugs will occur more frequently in this group of patients. Skin tests of fresh aqueous solutions of potassium penicillin in a dilution of 100 units per ml., may detect some of the possible penicillin reactors, although they do not safeguard against anaphylactic shock or other allergic reactions. With above reservations, the use of Procaine Penicillin G 6,000,000 units every 12 hours, Chloramphenicol 250 mg. every six hours, Streptomycin, Oxytetracycline, Sulfonamides, Oleandomycin and others, is indicated for bacterial infections. The combined use of Nystatin may prevent complications of fungal overgrowth of the intestinal flora, although its single use to combat respiratory monilia infection is unimpressive.

The antimicrobial treatment, once start-

ed, should be continued for ten to fourteen days to prevent relapses and the emergence of antibiotic resistant strains. The administration of antibiotics by aerosol administration no longer is very popular, because of potential sensitization to the aerosolized antibiotic. There are those who in cases of prolonged intrinsic asthma favor long-term prolonged antibiotic therapy with drugs such as Tetracycline. The majority of us, however, limit the use of antibiotics to the single episodes of infectious flare-ups.

In closing, less emphasis should be placed on eradication of infections and more on the prevention of the latter by utilizing some of the newer biological agents, such as Influenza virus vaccine, Adenovirus vaccine and others. The presence of other antigenic substances in these materials, such as egg white, does not exclude their judicious use in most asthmatic patients, who are insensitive to that particular foreign substance.

G. Combat Hypercapnia.

Simple asthma alone, without emphysema, rarely causes this complication of increased CO_2 content in the blood due to uneven and impaired pulmonary alveolar ventilation. Measures designed to improve the latter, are those directed against bronchospasm, secretions and infection. Attempts at direct lowering of blood CO_2 by carbonic anhydrase inhibitors (Diamox® and others), have not yielded impressive results.

H. Combat hypoxia.

Uncomplicated asthma rarely if ever causes hypoxia in the absence of other chronic lung disease. Hypoxia, in this case, is associated with hypercapnia and there is chronic depression of the medullar receptor mechanisms of respiratory regulation. As high-flow O_2 removes the chemoreceptor drive to respiration, causing apnea and mental confusion, nasal O_2 should not be administered in amounts exceeding 2 L/min., except in mechanical respirators.

I. Combat Respiratory Acidosis.

Respiratory acidosis subsides, as overall pulmonary status becomes compensated. Direct manipulation of the *p*H by "CO_2 organic buffers" is possible, but still in an experimental stage. The drug Tham (Trishydroxymethylaminomethane) appears promising in treatment of respiratory acidosis but requires further trials.

J. Mechanical Aids to Respiration.

Measures to improve pulmonary alveolar ventilation on a long-term or short-term basis are valuable. Abdominal breathing exercises, all stressing diaphragmatic breathing, are very helpful. They are usually supervised by a physiotherapist. In acute situations, mechanical aids to ventilation include mechanical respirators, such as the portable one, a pneumatic belt or the "iron lung".

6. Handling One Specific Patient with Bronchial Asthma

History: Mr. A. F. was born in Italy in 1890. He had an uneventful childhood history, the family history could not be elicited, as the patient failed to remember much about his parents in Italy.

While working as a baker, in 1928, he noticed a sudden attack of wheezing, which occurred in the bakery shop, in the winter months. A day later, he was fine, had no more wheezing or trouble. Two months later he had an attack of "pneumonia", associated with wheezing with slow onset, lasting one week. After this, he again felt well. In 1932, he again became very ill, had an attack of "double pneumonia", for which he was hospitalized for eighteen days.

He had been wheezing ever since. The history, since 1932, is that of progressive increase of his wheezing, associated with bouts of "pneumonia" and "U.R.I.", associated with cough, fever and purulent sputum.

The patient complained of nasal blockage and sneezing, associated with some periods of asthma, and he believed, that certain foods such as milk and egg, definitely aggravated his wheezing. At times he complained of a generalized pruritus, although no urticaria or actual rash was apparent. It was difficult for the patient to indicate seasonal aggravation of perennial wheezing, but he believed he had more difficulty in the early summer. The patient quit smoking ten years ago.

In cases, in which it is difficult to obtain a seasonal story, a careful search of

old hospital records can be most valuable. Figure 4 shows the results of such sur-

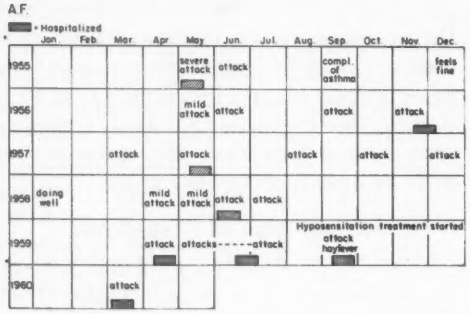

Figure 4. Review of old Charity Hospital Chart on Mr. A. F.

vey of the old Charity Hospital record, when entries in the record were plotted per month and year. Giving each attack a certain numerical figure, this seasonal behaviour becomes more apparent, if plotted in a graphical form (Figure 5).

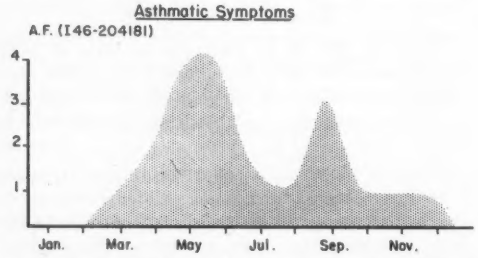

Figure 5. Graphic interpretation of old chart review on Mr. A. F.

On a basis of a careful history alone, utilizing some of the more searching techniques of gathering information, it appears that there are two peaks, in which the patient's asthma is more prevalent, these peaks correspond with the grass and ragweed seasons, suggesting some extrinsic component to this asthma.

Physical Examination:

General—Thin, elderly white male who appeared comfortable flat in bed, subjectively not short of breath, while at bed rest. T. 100°, P. 82, R. 20, B.P. 120/68.

Skin—Areas of vitiligo on lower arms, shoulders and neck, lower leg. Signs of scratching and excoriation on arms and shoulders.

EENT—Posterior pharynx inflamed, edematous. Postnasal drip, nasal mucus membranes pale and boggy. Conjunctivae normal.

Lungs and Thorax—A-P diameter increased. Chest expansion 2 inches difference between expiration and inspiration. Retraction of interspaces with inspiration. High pitched sibilant wheezes are heard in all lung fields. Resonant note upon percussion increased in all areas. Excursion of diaphragms 2 cm., bilateral and equal.

Heart—Normal sinus rhythm. Rate 83/min. regular. No clinical evidence of cardiomegaly. No thrills, murmers, or rubs, $A_2 = P_2$, no neck vein distention.

The physical examination still shows a good chest mobility of 2 inches difference between inspiration and expiration. This was encouraging, suggesting a considerable reversible element to the airway obstruction. Furthermore, nothing in the physical examination points to Cor pulmonale.

Laboratory:

Hb. 14 grams. Sedimentation Rate: 44 mm/h. WBC 13350, Diff: PMN: 78, L: 12, Eo 8, M 1, B 1.

Urine analysis: negative.

Cultures: throat: Neisseria catarrhalis. Sputum: Neisseria catarrhalis, Alpha hemolytic streptococcus, Staphylococcus aureus (sensitive to Chloromycetin—Albamycin—Erythromycin).

It appeared that infection played a role here and considerable eosinophilia suggested bacterial hypersensitivity, in short *intrinsic factors were suggested by laboratory tests.*

X-rays:

May 16, 1955: Possible basal bronchiectasis.

June 6, 1958: Markedly emphysematous—No definite pneumonia or bronchiectasis suspected.

July 31, 1958: Density left lung base.

September 1959: Fibrotic changes throughout both lung fields, no evidence of an active consolidation.

March 1960: Fibrotic changes both lung fields.

Electrocardiograms:

November 1956: Normal

May 1957: Suggestive of chronic pulmonary disease.

June 1958: Suggestive of chronic pulmonary disease.

June 1959: Suggestive of chronic pulmonary disease. Possible healed anterior lesion.

Prior to any further allergy work-up we must judge if there is sufficient reversibility and return to normal values, after bronchodilators. Only then could we expect significant help by treatment of this patient. (Table 2)

Marked improvement was noted after our patient inhaled Isuprel by the IPPB technique. This suggested that extrinsic asthma was his main problem, that he was a candidate for hyposensitization therapy, together with aggressive symptomatic care.

A diagnostic hospital study is the most convenient way to study a difficult and complicated problem of asthma. Various steps in such study are described in Table 3.

This diagnostic hospital study produced the following information: On admission there was

TABLE 2
PULMONARY VENTILATORY STUDIES

	Before IPPB with Isuprel			After IPPB with Isuprel		
	VC	TVC	MBC	VC	TVC	MBC
Oct. 8, 1957	2218	80%	33	3006	75%	52
July 3, 1959	1119	69%	22	3130	65%	60

VC = Vital capacity
TVC = 3 second timed vital capacity
MBC = maximal breathing capacity
IPPB = intermittent positive pressure breathing

TABLE 3

Date:	Action Taken:	Reason for This:	Observed Effect:
June 26, 1959	Admitted to hospital; no symptomatic treatment	Evaluate effect of removal from home environment	No significant change
June 29, 1959	Sputum culture treat with antibiotics	Evaluate importance of infection	Slight improvement
July 3, 1959	Double spirograms (one dose of Isuprel after baseline pulm. function studies	Evaluate reversibility of bronchospasm	Completely free of wheezing immediately after Isuprel IPPB
July 5, 1959	No treatment except antibiotics, pt's sputum no longer purulent		Wheezing 70%
July 7, 1959	Strict elimination diet ("only bananas")	Evaluate foods	Best night in 7-8 weeks
July 12, 1959			Wheezing (40%) Wheezing (20%) "but getting weak"
July 14, 1959	Intradermal skin tests to pollens and dust	Evaluate treatable inhalant factors	Acute attack 2-4 hrs. after skin testing
July 15, 1959	Allowed to recover from flare-ups caused by skin test		
July 16, 1959	Back on full unrestricted diet	Provocation test with foods (unrestricted diet)	Wheezing worse (70%)

an associated pulmonary infection which aggravated the asthma. The treatment of it left the patient, however, with nearly the same amount of wheezing, again suggesting that extrinsic factors were most important. This was further supported by the double spirogram values, the history and the physical examination. The improvement on a strict elimination diet and the worsening on resuming an unrestricted normal diet suggested food allergy factors, requiring further study in this patient.

In Table 4 are given the results of multiple scratch tests with food antigens, done throughout the years, by others and by us:

Therefore we used foods from group III as a basic diet. No flare-up of his asthma was observed on this basic allergy diet. We are not saying, that this patient could eat only the foods in group III, but these were the safest to start with on a base-line diet. Weekly, since, one food has been added to the list, which is evaluated on the basis of whether it clinically produces symptoms or not. After being stabilized on this diet, the patient was discharged home, with the medications unchanged from what he received in the hospital. There was a slight increase of his wheezing, immediately on returning home. This suggested some home allergenic contacts to be operative here likewise. On a return visit the patient admitted that he had had a small puppy dog in his home for the last five years. This pointed out one important fact. One should never consider a history completed. Additional bits of information must be sought after, at each further clinic visit. The removal of the dog led to some improvement of his symptoms, but there still was a residual amount of wheezing present.

Without skin-testing we have arrived at the following diagnostic impressions:

1. Chronic bronchial asthma, mixed type, extrinsic and intrinsic.
2. Possible bilateral basal bronchiectasis.
3. Minimal diffuse obstructive emphysema.

TABLE 4
SCRATCH TESTS

I. Positive on one test only

Buckwheat	Okra
Beef	Peanut
Chicken meat	Pecan
Coffee	Pea, green
Cabbage	Potatoe, white
Cocoa (chocolate)	Rice
Egg, whole	Squash
Fish	Tomatoe
Lettuce	Wheat

II. Positive on two tests

Bean, soy	Pork
Celery	Rye
Lamb meat	Spinach
Milk, cows	Shrimp

III. Negative on two tests

Apple	Cantaloupe
Avocado	Mustard
Artichoke	Oat
Bean, lima	Orange
Banana	Potatoe, sweet
Cauliflower	Oleomargarine
Carrot	Milk, goat's
Corn	

On the basis of a history and the hospital work-up alone we have established the following suspects for etiologic factors:

1. Grasses
2. Ragweed
3. Foods
5. Environmental molds and housedust (?)
5. Dog dander
6. Bacterial hypersensitivity

Immediate Intradermal Skin Tests (10-20 min.):

House dust + +	Alternaria +
Ragweed + + + +	Hormodendrum +
Mixed trees +	Mucor + +
Bermuda grass +	Candida Albicans + +
Marsh Elder + +	Penicillium –
	Aspergillus + +

A small one plus reaction to bermuda grass assumes, therefore, equal clinical importance as a four plus reaction to ragweed, on the basis of the history. On the other hand, the one plus reaction to trees, has no or little importance, as there are no increased symptoms during the tree pollination season. The molds appear clinically important as the patient's symptoms were observed to increase, when other clinic patients with known pure mold allergy also got worse.

Treatment:

Specific: Weekly hyposensitizations were started, using ragweed, marsh elder, bermuda grass, housedust, and the various molds. They were given, with good local swelling response at the site of injection. After twenty weeks of weekly injections the patient was on the perennial schedule, receiving a maintenance antigenic dose every month or earlier, if symptoms required it.

He continued to follow a liberal elimination diet, adding one item of food each week, to decide whether or not it clinically caused symptoms. He was carefully followed for flare-ups of bacterial infections, for which antibiotics were required from time to time.

Non-specific: Active bronchodilator, antisecretion and anti-apprehension medication is maintained, according to principles outlined previously. It has not been necessary to resort to steroid medication at any time.

Results: Mr. A. F. had no seasonal increase in symptoms April 1960 to June. He was no longer restricted to activity around the house, because of extreme pulmonary disability. He has not needed to go to the Emergency Room for six months, no adrenalin injections were required, he can now walk 10 blocks without becoming short of breath. He still wheezes, as he has a certain irreversible element of diffuse obstructive emphysema.

7. Prognosis and Complications

The prognosis of complete freedom of asthmatic wheezing, in extrinsic asthma, is 70 per cent, on good and competent combined specific and nonspecific therapy. In early "virgin" cases this percentage of good results is even better. The most impressive results are obtained with house dust hypersensitivity, and with pollen cases (trees, grasses, weeds). Mold hypersensitivity requires greater skill and is less successful. The results in intrinsic asthma are nonimpressive and each subsequent infection will lead to a flare-up of symptoms. The success here depends on the skill to avoid and treat infections, as they recur. The use of bacterial vaccines, to reduce the incidence of infections, is controversial and requires further unbiased, well-controlled study.

At times constitutional reactions occur with injection of antigen material. These are not too serious in the hands of those who are well trained to cope with such emergency, but are extremely dangerous, when good knowledge on treatment is deficient. A tourniquet proximal to the injection site is applied on the slightest suspicion of a systemic anaphylactic reaction, while adrenalin 1:1000 0.3 ml. is injected into the other arm and a similar amount

into the antigen injection site. At times, larger amounts are required. The concomitant use of an intravenous antihistaminic or steroid will at times be very helpful, to reduce discomfort to the patient.

Other complications, in the management of bronchial asthma, are those of progressive lung disease, with increasing pulmonary ventilatory dysfunction, severe emphysema and later cor pulmonale. This should really not occur in a well cared for asthmatic patient.

The most serious complications are the iatrogenic complications, primarily due to the injudicious use of steroid drugs, which are mostly employed not after a careful work-up, but rather instead of one. It appears that the mortality rate has increased since the advent of steroids, in the field of bronchial asthma. The complications are those due to adrenal cortical atrophy and a failure to appreciate the extreme exogenous steroid dependence of some of those patients, the other effects are those known, such as mental changes, osteoporosis, hypertension, hyperglycemia, gastric ulcers and the like.

Summary

Anybody can treat early simple extrinsic asthma with pills. This requires no skill. A good physician, however, will not procrastinate with symptomatic treatment alone, as this is short-sighted. The exact etiologic factors should be identified promptly, avoided or treated by hyposenzitation, in the case of extrinsic bronchial asthma. The sudden disappearance of wheezing, after adrenalin, or a good response on a double spirogram, are the most important prognostic clues, indicating the degree of reversibility of the disease. If wheezing is still present after six to twelve months of aggressive and conscientious management, with specific and nonspecific therapy, a complete reappraisal or a consultation appears indicated.

Today, there is every reason to be most optomistic and enthusiastic in the treatment of bronchial asthma, especially in its "virgin state", before irreversible changes have complicated the disease. Under any physician's management, there is no excuse for any simple extrinsic asthmatic patient, who continues to wheeze. You have the right to get complete freedom from symptoms, and you should expect it.

Acknowledgement: The author wishes to thank Mr. Eugene Taylor, Senior Medical Student at the Louisiana State University of Medicine, for his cooperation on the diagnostic work-up on Mr. A. F. Mr. Taylor reviewed the old Charity Hospital chart and performed some of the intradermal skin-tests.

Treatment of Upper Respiratory Tract Infections with Oxytetracycline

• The success of this drug in the treatment of 106 patients is pointed out. Most of the failures occurred in ear infections caused by pathogens resistant to other antibiotics.

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IN a monograph covering the first six years of oxytetracycline therapy, Musselman [1] pointed out that this is an antibiotic of first choice in infections not responding to penicillin, and this fact has been confirmed by experience of the ensuing four years. Infection of the respiratory tract, noteworthy for the variety of pathogens involved, has been found one of the best fields for oxytetracycline.

Denenholz et al.,[2] who reported success in the majority of cases unresponsive to penicillin, began treatment with intramuscular oxytetracycline and continued with oral administration. Now that a preconstituted intramuscular preparation of oxytetracycline is available, this method has much to recommend it, the more so as there appears to be no other broad spectrum antibiotic for intramuscular use that is at once convenient, stable and effective.[3, 4] It is thus feasible to treat serious infections with a broad spectrum antibiotic that has rapid action, and to continue with the same antibiotic given orally as soon as the infection is brought under control.

Materials and Methods

The present study is based on the treatment of 106 patients, 50 of them male and 56 female; 9 were infants, 50 were children and adolescents, and 47 were adults with an age range of 21 to 61. The diagnosis was otitis media in 41 cases, mastoid infection in 20, tonsillitis or adenoiditis in 19, rhinitis, pharyngitis or sinusitis in 12, bronchitis in 2, and furunculosis, cellulitis or abscess in 12. Many of the patients had chronic infections previously treated with penicillin, tetracycline or other antibiotics with only partial success or complete failure.

The infecting organisms were identified in nearly all cases, and their susceptibility to various antibiotics was tested. Virtually all the patients were first seen in the outpatient clinic of the Charity Hospital, and treatment was usually prescribed on ambulatory or domiciliary basis, with follow-up visits as frequent as was warranted by the severity of the infection. Seven patients were hospitalized, either because of the gravity of their condition or because home treatment had proved unsatisfactory because of failure to follow directions.

All patients were treated with oxytetracycline,* and oral dosage was preceded by intramuscular administration in 44 cases. Infants and children had 100 mg injections, twice in 2 of the 13 cases, and continued for two or three days in 6 of them. Older patients had 250 mg. injections, sometimes repeated two to four times daily, and continued for two or three days. Oral dosage for infants was 250 to 375 mg. daily; children were given 500 mg. to 1 g. daily; and adult dosage was 1 to 2 g. per day, the higher amount being sometimes decreased to 1 g. after a few days. Oxytetracycline was continued for five days in most cases, but in some for

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* The preparations used were supplied by Pfizer Laboratories as Cosa-Terramycin® capsules, Cosa-Terrabon® suspension and pediatric drops, and Terramycin intramuscular. The drops were used in infants, the suspension in children, and the capsules in older patients.

† Supplied by Pfizer Laboratories as Terramycin otic with polymyxin B sulfate and benzocaine.

as long as fifteen days. Many of the patients with otitis media or mastoid infection had topical application of oxytetracycline,† often in conjunction with oral medication, and sometimes replacing it after a few days. Vasoconstrictors, analgesics, antihistamines, gargles and sinus irrigation were prescribed in appropriate cases. Abscesses were incised and drained, sometimes with application of local oxytetracycline. Myringotomy was performed in 5 cases of otitis media.

Results

Results of therapy arranged according to primary clinical diagnosis are summarized in Table 1, and in Table 2 they are arranged according to bacterial diagnosis. Table 2 contains data on 103 infecting organisms recovered from 98 patients. The pathogens were not identified, or their susceptibility to antibiotics was not determined in the other 8 cases.

Generally speaking, there was good correlation between susceptibility and clinical results. For example, all 5 strains of proteus were resistant, and these infections were not cleared up. Staphylococcal infections, however, did not follow the same pattern. Out of 15 strains found to be resistant in vitro, 5 were completely controlled and 2 were partially controlled. Of all bacteria tested, 77 per cent were sensitive, indicating that oxytetracycline had a greater range of effectiveness than the other broad spectrum antibiotics.

All but one of the failures were among the cases of otitis media and mastoid infection (mastoiditis and postmastoidectomy infection). Nearly all of them were stubborn and chronic cases that had failed to respond to a variety of other antibiotics. They were classed as failures if the basic condition did not improve significantly, yet there was some improvement

TABLE 1

	Number	Cure	Improvement	Failure
Otitis media	41	29		12
Mastoid infection	20	7		13
Tonsillitis, adenoiditis	19	16	2	1
Rhinitis, pharyngitis	4	4		
Sinusitis	8	8		
Furunculosis, cellulitis	4	4		
Bronchitis	2	1	1	
Abscesses	8	8		
Totals:	106	77 (73%)	3 (3%)	26 (25%)

TABLE 2

	Number	Number sensitive or resistant	Cure	Improvement	Failure
Beta-hemolytic streptococcus	13	13 S	13		
Enterococcus	5	4 S	3	1	
		1 R			1
Staphylococcus	42	27 S	27		
		15 R	5	2	8
Pneumococcus	2	2 S	2		
Paracolon bacillus	12	10 S	9		1
		2 R			2
Escherichia	4	3 S	3		
		1 R			1
Aerobacter	5	3 S	3		
		2 R			2
Alcaligenes	1	1 S	1		
Proteus	5	5 R			5
Pseudomonas	14	5 S	5		
		9 R			9

in most of them. Fever, leucocytosis and upper respiratory symptoms subsided in most, as did a mastoiditis complicating a resistant case of otitis media.

Symptomatic improvement was apparent in an average of five days, and in the successful cases cultures became negative and the ears clear in one to two weeks. Some of the best results were seen in patients who were most severely ill. In a case of acute otitis media with mastoiditis, abscess formation and bronchopneumonia, the response was both rapid and complete.

The only failure not included among the ear infections was a case of tonsillitis in which a peritonsillar abscess developed, caused by a resistant staphylococcus. The infection was cleared by incision and drainage under cover of oxytetracycline. The response in sinusitis was particularly gratifying, as both acute and chronic cases were controlled within an average of five days.

A typical patient was a nurse of 44 who had bilateral maxillary and ethmoid sinusitis, with excruciating pain. Medication consisted of a single intramuscular injection of 250 mg. of oxytetracycline, followed by oral dosage of 1 g. daily in conjunction with a vasoconstrictor. Symptoms were promptly relieved and all signs of infection disappeared in eight days. A similar infection, two years previously, had responded poorly because the patient had a severe reaction to the sulfonamide used in treatment.

The only undesirable side effects were slight pain at the injection site in 1 case, mild nausea in 2, black tongue in 1, and diarrhea in 3 . The diarrhea was controlled in 1 case by reducing the dose from 2g. to 1 g. daily, and with an antidiarrheal agent in the other 2. Otherwise oxytetracycline was perfectly tolerated, and medication never had to be discontinued prematurely. It was the impression of the hospital staff that oxytetracycline was not only better tolerated, but more effective than other antibiotics habitually used.

Discussion

An interesting and confusing aspect of this study was the response of staphylococcal infections in relation to bacterial resistance. Only 36 per cent of the 42 strains tested were resistant to oxytetracycline. This is lower than usually reported in the literature, no doubt in part because the patients were not hospitalized; but it has been pointed out that the overall incidence of resistance is not so high as it was because there is now a certain equilibrium between emergence and disappearance of resistant strains.[5] Antibiotic combinations have been widely recommended for overcoming recalcitrant staphylococcal infections, and considerable clinical success has been reported,[6-11]

In the present series, about half of the resistant strains were completely or partially controlled. Perhaps this proportion could have been improved by adding a second antibiotic. Four of the resistant infections cured by oxytetracycline had failed to respond to previous administration of tetracycline, although there were a number of others resistant to both. There is often no difference between the antibacterial spectrum of the two antibiotics, but in some instances it has been found that oxytetracycline has a wider spectrum clinically [12] and a lower minimal inhibitory concentration in vitro.[13]

The results reported here are not brilliant, as a quarter of the cases were classed as failures. But since nearly all of the infections were serious, since most of the failures had been unresponsive to other antibiotics, and since oxytetracycline was often successful when other antibiotics had failed, there is good reason to consider it one of the most effective agents for treatment of infection of the upper respiratory tract.

An added advantage is the fact that it is extremely well tolerated; despite dosage as high as 2 g. daily, it was never necessary to interrupt treatment. For serious infections requiring rapid action, the availability of a convenient and well tolerated intramuscular preparation makes it possible to use the parenteral and oral routes concomitantly or serially without the necessity of changing antibiotics.

Most of the infections which did not respond to oxytetracycline therapy, especially mastoid infections and otitis media, occurred in patients who were exposed to various and prolonged antibiotic therapies, sometimes for a period of years. Most of the infections were chronic and sometimes resistant so that the blood supply was poor. Due to that fact a high concentration of the drug could not be obtained.

Summary

A series of 106 patients with infections of the upper respiratory tract were treated with oxytetracycline for five to fifteen days. Adult dosage was 1 to 2 g. daily by mouth, and dosage for infants and children was proportionately less according to weight.

In 44 cases oxytetracycline was given intravenously at the beginning of treatment, and it was applied topically in suitable cases of otitis media and mastoid infection. The medication brought about complete cure in 73 per cent of the cases and significant improvement in an additional 3 per cent.

Most of the failures occurred in ear infections caused by resistant pathogens, which had not responded to other antibiotics. Some of the patients responded well to oxytetracycline even though there was in vitro evidence of resistance and there had been no response to previous antibiotics, including tetracycline.

Undesirable side effects were minimal, and it was never necessary to discontinue therapy prematurely. It is concluded that oxytetracycline is highly effective in the treatment of infections of the upper respiratory tract.

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The Impact Of Dynamic Psychiatry In Louisiana*

• The spread of a new approach to psychiatric problems throughout Louisiana is described.

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New Orleans

WHEN one is confronted with a task of putting facts together in a fluid situation, which is relatively in its infancy, there is a tendency to be all inclusive. This inclination is tempered by the fact that it would be presumptious to draw broad inferences. Dynamic psychiatry in Louisiana is in just such a situation.

While there were forerunners of this trend earlier, its beginnings in a concrete way came in the turmoil of World War II, which awakened people to the need for greater understanding of human behavior. Psychiatry realized it had to abandon its descriptive and diagnostic approach and turn to the treatment of patients through understanding human emotions, behavior, and interactions. Prior to this time psychiatry in Louisiana, as in most other sections of the nation, was a medical specialty dealing only with mentally sick people. Today, psychiatry has developed beyond that point, and has expanded to join forces with other social sciences in understanding the human mind. In Louisiana, psychiatrists not only treat patients, but under the influence of the dynamic approach, also engage in cooperative efforts with such disciplines as social welfare, education, psychology, anthropology, sociology, law, and public health.

Nature and Development

Before discussing the status of dynamic psychiatry in Louisiana, let us briefly consider the nature and evolution of this approach. While there are many theoretical variations, and limitations of the scope of treatment, for all practical purposes dynamic psychiatry is synonymous with psychoanalytic psychiatry. Others have contributed to the field, and enlarged on psychoanalysis, but the fountainhead of theory and therapeutic techniques is the psychoanalysis developed by Sigmund Freud. In the latter part of the nineteenth century, Freud turned away from the cellular-pathological and mechanistic approach to mental patients and emerged with theories which commanded the attention of those who were dissatisfied with the traditional approach to medicine. His theories were based on two basic hypotheses:[1] psychic determinism and unconscious mental processes existing in all human beings, normal or mentally ill. These hypotheses were buttressed by his theories of resistance and repression, the etiological significance of sexual life, and the importance of infantile experience.[2] Later came the structural approach of id, ego, and superego. Today, we speak of these concepts in terms of ego psychology, defenses, relationships, and reactions.[3] Freud's theories of instincts, libido, and biological-sexual origins of neuroses have been subjected to severe criticism both within the ranks of psychoanalysis as well as from those not so trained. Nevertheless, his theories have formed the basis of what today we call dynamic psychiatry. The term dynamic is a Freudian designation for the interplay of mental forces.

Along with the dynamic approach, other important contributions to psychiatry influenced American psychiatry. Kraeplin's descriptive psychiatry was the first major step in trying to categorize and diagnose psychiatric disorders. In the United States, Adolph Meyer did much to achieve the understanding of the total personali-

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ty, and its development. However, the awareness and study of psychic forces and their vicissitudes commands a dominant position in our approach to psychiatry.

The development of dynamic psychiatry in the United States took time, and required the overcoming of considerable resistance, especially from medicine. It is not strange that it became more readily accepted in the related fields interested in understanding human conduct. Nowadays students more often than not are exposed to psychoanalysis for the first time in nonmedical college courses.

Psychoanalytic training was at first informal and highly individualized, but later became organized into Institutes for training of psychoanalysis. These Institutes became and today still are the major centers for training and teaching of psychoanalytic theory and techniques. Only much later was this training introduced into the Universities and Medical Schools. Medical school affiliations displeased Freud because he considered this would dilute his theories, and more important, because he felt psychoanalysis should not be bound to psychiatry. Instead he looked at it as a field of study as broad as psychology, because it encompassed both normal and abnormal mental functioning. Today in the United States, psychoanalysis has become closely affiliated with medicine and essentially through this alliance has spread to other fields.

Development in Louisiana

Let us now return to Louisiana and see how dynamic psychiatry evolved here. In the pre-World War II era there were a handful of psychiatrists who drove the wedge in introducing this approach in the State. These physicians were not trained as psychoanalysts but were familiar with dynamic concepts and introduced them in a small but definite way into the practice of psychiatry, medical schools, and social agencies. They attempted to understand the meaning of symptomatology in addition to diagnosing and empirically treating emotionally disturbed patients. It should also be said that descriptive and diagnostic psychiatry contributed much to the treatment and understanding of mentally ill patients. Unfortunately at times this approach is forgotten in an effort to free-float into people's minds. It would be accurate to say that psychoanalytic theories added to the existing knowledge of psychiatric patients. The humane relief of suffering with drugs, physical methods of treatment, hospitalization, and other measures has in no way been supplanted by the understanding of the human mind. It only makes us use these techniques more appropriately and go beyond these bounds when acute suffering subsides.

In 1942, Doctors Henry and Anna Colomb came to Louisiana from St. Elizabeth's Hospital in Washington, D. C., which was then and still is a great psychiatric center. In addition to treating patients, Doctor Henry Colomb has contributed much to such matters as helping write the Mental Health Act for the State of Louisiana, developing the School of Social Welfare and Department of Psychiatry at Louisiana State University. Doctor Anna Colomb was the first trained psychoanalyst to settle in Louisiana, having had her training in the Washington, D. C., area. She is a charter member of the Washington Psychoanalytic Society, one of the first American Psychoanalytic Societies to be formed. Her arrival on the scene was an impetus in the direction of educating physicians and others in psychoanalysis through the basic route of personal analysis. Through her knowledge of the ingredients necessary for properly training and teaching psychoanalysis, she did much spade work for the onset of formal psychoanalytic training. In 1944, Doctor Samuel Barkoff returned to New Orleans, having been trained and accredited as a psychoanalyst in the Washington-Baltimore Psychoanalytic Institute. The demand for his services immediately put a big load on his shoulders, and he, too, began psychoanalyzing patients, engaging in teaching at the medical schools, and consulting with social agencies.

Doctors Anna Colomb and Samuel Barkoff together with the assistance of Doctor

Ernest Hadley of Washington, D. C., and Doctor Lewis Hill of Baltimore, began classes in psychoanalytic training for psychiatrists in 1947. This was the beginning of formal training in psychoanalysis locally. In 1948, the New Orleans Psychoanalytic Study Group was recognized as a training facility of the American Psychoanalytic Association. The latter organization has since 1911 been the dominant scientific organization for exchange of psychoanalytic information and maintenance of high standards of training and practice of Freudian psychoanalysis. Considerable assistance for the local development was given by many eminent psychoanalysts including Doctors Therese Benedek, Edward Bibring, Maxwell Gitelson, Russell Anderson, Philip Wagner, Edith Weigert, Frieda Fromm-Reichmann, Emmy Sylvester, Bertram Lewin, Helen Ross, and Phyllis Greenacre, all of whom contributed heavily both in teaching and advice regarding the training of psychoanalysts. In 1949, Doctor Norman Rucker, who was trained as a psychoanalyst at Columbia University, became the third local member to contribute in a substantial way to this program.

The Washington-Baltimore Psychoanalytic Institute was the sponsoring training facility, and later the Washington Institute continued as it still does today in assisting what is now known as the New Orleans Psychoanalytic Training Center. Doctor Rex Buxton of Washington, with assistance from Doctors Robert Morse, Alexander Halperin, Leo Bartemeier, and Lucie Jessner, took over from the earlier advisers and teachers, giving heavily of themselves to make the Training Center succeed.

It is difficult to conceive how these individuals in New Orleans who were primarily engaged in the private practice of psychiatry and psychoanalysis could give so much time and energy to what is equivalent to a post-graduate university education for a doctoral degree. They had to personally psychoanalyze patients, teach classes in theory and technique, as well as supervise the candidates' treatment of patients. Without their efforts it is unlikely that we would have the Psychoanalytic Training Center here. Much like the early radiologists who were exposed to the ill effects of x-rays and radioactive materials, these early leaders in breaking through the social crust to analyze the intense primitive mental forces frequently were the recipients of unleashed psychic energies. It took a great deal out of them in terms of time and from their personal lives. It was only last year that Doctor Colomb could retire to her home and office and assume an inactive status as a teacher and leader because her active participation had been mandatory to the success of the Training Center. Doctor Barkoff, at the height of his career, died suddenly from an acute infectious disease. His untimely death was a great personal loss to many people throughout the state and elsewhere, and left a large gap in the training program.

Today the New Orleans Psychoanalytic Training Center continues actively in its role of training psychoanalysts, but even more important, as a force in disseminating dynamic psychiatry in areas far beyond its confines. In 1953, the New Orleans Psychoanalytic Society was organized and was approved as an affiliate society of the American Psychoanalytic Association in 1955. This is the organization which deals with the scientific aspects of psychoanalysis, and was formed as a joint organization with Louisiana and Texas psychoanalysts. The initial leadership of Drs. Anna Colomb and Samuel Barkoff was continued by Doctors Henry Miles, Theodore Watters, and Kenneth Beach.

Development at the Universities

While the stress to this point has been mostly on traditional psychoanalytic facilities, of equal importance locally has been the evolution of the departments of psychiatry in the Louisiana State University and Tulane University Medical Schools. In 1949, Doctor Robert Heath came to Tulane University Medical School to head the department of psychiatry and brought with him the concepts of dynamic

psychiatry. His training as a psychoanalyst, coupled with his other interests, has brought not only the teaching and research in the psychological aspects of dynamic psychiatry, but also in the anatomical-physiological basis for the sources of psychic forces. The students and residents in psychiatry at Tulane Medical School have been exposed to psychoanalytic psychiatry and have made it an integral part of their armamentarium. In 1951, Doctor Robert Matthews reorganized the department of psychiatry at Louisiana State University Medical School, and fostered the growth of dynamic psychiatry as well as teaching the total approach to psychiatry in general. He encouraged psychiatric residents to get personal analysis and go on with psychoanalytic training if their interests developed in that direction. He was later succeeded by Doctor Charles Watkins. Louisiana State University Medical School has been an important contributor to the growth of dynamic psychiatry.

The New Orleans Neuro-Psychiatric Society has been instrumental in gathering together the psychiatrists from Louisiana and Mississippi and fostering the dissemination of concepts of dynamic psychiatry. Much active work with public education, assistance with teaching and training, and encouraging modern legislation has been accomplished by the Louisiana Association for Mental Health under the direction of Doctor Lloyd Rowland.

Not only have the medical schools in the last decade been teaching psychoanalytic theory, but other departments of the universities throughout the state such as the Schools of Social Welfare, have been educating students in this theoretical framework as a part of their general background.

Spread Throughout State

The impact of these educational trends has been significant. Psychiatrists trained in Louisiana are now spreading throughout the state, and all through the South, treating patients with the use of these new techniques. There is no question but that people with mental illness in Louisiana today are receiving the finest psychiatric care available anywhere in the United States. This has had its impact logically enough, in the decrease in length of period of hospitalization of patients, and more solid and substantial recovery. While few patients can be treated by formal psychoanalysis, many are being treated with techniques developed from psychoanalytic theories. A psychiatric consultation today is not merely the rendering of an opinion but also brief treatment.

Another effect of this training is the dissemination of dynamic theories to people via the other routes mentioned. Social workers involved in the task of handling aid to dependent children, for instance, handle their problems with dynamic principles in mind. They not only evaluate financial needs, they are also better equipped to deal with the whole human being and family picture, and to understand some of the motivation for the behavior of their clients. It is customary for social workers and psychologists from all corners of the state to get together periodically to learn more about such theories and techniques so that they can bring back to their communities knowledge of practical use. Probation workers from the Juvenile Courts all over the state are exposed to these theories, and use them in coping with the thorny problems of juvenile delinquency. Institutes for teachers have for many years in this state included lectures on dynamic psychiatry so as to bring into the classroom an approach to understanding children. Sociological studies with teams of sociologists, anthropologists, psychiatrists, and psychologists are emerging in attempts to understanding social phenomenon. Nurses, clergymen, physicians, parents, and nursery school personnel are now sitting in on seminars or attending lectures soaking up this knowledge.

Mental Hygiene Clinics

An important aspect of the effect of dynamic psychiatry has been the development of mental hygiene clinics throughout the state. The first one was started out-

side of New Orleans in 1947 through the sponsorship of the New Orleans Guidance Center, State of Louisiana, and Junior League in Shreveport. This was a child guidance center, but its success led to the state starting and fully supporting mental hygiene clinics throughout the state for the treatment of out-patients. Without dynamic psychiatry, there would be few practical techniques in dealing with out-patients. The preventive aspect of this program is hard to fathom.

The formation of Acute Intensive Treatments units in the State Hospital system, and research programs has been stimulated by the impact of dynamic psychiatry. Patients are no longer looked at as alien individuals whom we cannot understand. While we do not always understand them, at least we have an approach in trying to work with such patients. We know if we translate their language, the fact that conflicts exist in their unconscious minds, and that there is a reason for their behavior, we stand a chance of getting access to them in a helpful way. There has been an evolution from chains to straight jackets, and prison security, to open ward management, and outpatient treatment of psychiatric patients.

Influence on Children

Children, too, have benefited from this development. Freud pointed out that events in childhood were of etiological significance in emotional illnesses. This started a movement towards better understanding child development and looking at the child not as an amorphous human being, but a human being with a mind similar to adults. The understanding of childhood neurosis and psychoses was the beginning of understanding of normal childhood development. We have a fairly good idea today as a result of this body of knowledge regarding matters such as why children have night terrors, refuse to go to school, are antisocial, cannot learn, are delinquent, or engage in habits that are repulsive or disturbing to adults. Unfortunately we cannot always cure these problems, but we have gone a long way in understanding them sufficiently so as to guide parents in helping their children grow up with healthy minds. Direct psychoanalysis of children, observations of children in various settings, infant studies, are some of the important ways we have of collecting pertinent data. The enigma of adolescence has long been a hiatus in the body of dynamic understanding. Today we are creeping up on this problem, despite vigorous efforts of the adolescent community to both set up decoys in our way and give us much help by presenting themselves. Children in Louisiana today are benefiting from this knowledge, much of it coming from studies now being made in the state. Parents turn to professional people so trained to assist them in guiding their children. The Guidance Center in New Orleans began with dynamic orientation towards childhood problems and through it, and the Institute of Mental Hygiene, has trained personnel and disseminated knowledge in a consulting capacity for many years.

Limitations

While one can get carried away and speak of psychoanalytic theory influencing the state in such a broad way, one should also note its limitations. Although most of the psychoanalytic theory has come from the psychoanalysis of patients, the treatment of patients with this technique leaves much to be desired. It is long, expensive, and available to very few people. Therapeutic results are ill defined, although unquestionably beneficial. Its main impact has come through application of this theoretical framework to modified techniques and to other fields. Yet the other fields are limited in developing this theory because it requires delving into the unconscious mind through psychoanalytic technique to expand the theory. The problem of human beings having to observe themselves presents a tremendous obstacle in the further development of dynamic theories. It is of critical importance to maintain facilities not only for the training of psychoanalysts, but also encouraging and supporting further

research into the ill defined areas. Fascinating research into the neuro-physiological basis for human behavior, psychological studies, infant studies, group observations, etc., all seem to be pushing toward the same goal—that is, to fathom the nature and functioning of the human mind. Louisiana has made tremendous strides in these areas, and will continue to because it not only has the professional people working on these problems, but also the support of the public in a most responsive way.

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New Orleans Charity Hospital Training School for Nurses

The Administrators of the New Orleans Charity Hospital have made arrangements for giving a two years' course of training to women desirous of becoming professional nurses.

Those wishing to receive such a course of instruction must apply to the House Surgeon of the Charity Hospital, New Orleans.

The most desirable age for candidates is from twenty-five to thirty-five years of age; they must be in sound health, and must present, on application, a certificate from two responsible persons (one a physician) as to their good character and good health. Upon the recommendation of the House Surgeon of the Hospital and the approval of the administrators, they will be received for one month on probation; during this month they are boarded and lodged at the hospital, but receive no compensation.

* * * *

All nurses are required to be sober, honest, truthful, trustworthy, punctual, quiet, orderly, cleanly, neat, patient, kind and cheerful.

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Editorial

Radiation Hazards in Diagnostic Radiology

" * * * But in these cases
We still have judgment here; that we but teach
Bloody instructions, which, being taught, return
To plague the inventor;" *Macbeth, Act I, Sc. 6*

Such thoughts as these apply today when one considers radiation hazards in the field of diagnostic use of x-ray. This extraordinary device has been in use a little over sixty years.

Radiologists have acquired increasing knowledge as to the dangerous effects of radiation. As the result of researches in this and related fields, the dangers have been reduced and protection increased. Measures to this end have been recommended by successive groups and commissions, who have done research in this field since 1920. As increasing knowledge became available, a greater degree of security was attained.

Following the massive radiation effects of the atomic bomb, and later the effects produced by increasing use of radioactive isotopes, a widespread interest has developed on the part of hemotologists, biophysicists, and geneticists, as well as radiologists, on the remote effects of small doses of radiation, as well as on the immediate effects of massive doses of radiation.

From authorities set up to study radiation recommendations and proposed laws have come which would have far reaching effects. Deductions from experimental data by investigators in some fields have been expanded to imply a risk to the race which is not susceptible of proof. In various fields, contradictory observations have come from competent investigators.

Certain sections of the public have been misled as to the practical aspects of diagnostic radiation. Naturally, its uncertainties are principally concerned with the remote effect of small doses of radiation. From this field, which is amazingly exact in its technical aspects, and highly conjectural in its racial effects, have come certain statements, plans, and recommendations upon which most common sense radiologists can agree. It appears that the whole globe and its inhabitants are subject to constant radiation. This has its

origin in cosmic influences and this radiation is more noticeable at high altitudes, in the area of minerals, and in certain portions of the earth. Whatever damage this radiation may have on biologic processes through the eons of time cannot be scientifically stated, but at least we know we are still here.

As regards man made radiation, no statement as to a safe dose for the nation as a whole has been attempted, but it has been stated that for practical purposes, minimum possible exposure is always a desired goal. Maximum permissable limits have been set up by the National Committee on Radiation Protection and in diagnostic radiology the hazard is to limited portions of the body from small doses of repeated radiation. The effects thus produced are considered, on the one hand, as somatic, in which certain tissues exposed to the rays, undergo degenerative effects. The other aspect is the genetic hazard and the ability that x-ray has to produce mutation in the genes of the gonads which might extend to all posterity.

Elaborate mechanical devices and technical procedures have been devised to get the maximum diagnostic effect out of a minimum of radiation. The genetic effects are regarded as unimportant after the approximate age of thirty, and under thirty, the gonads should be protected whenever possible. Radiation of women in pregnancy should be avoided during the first three months and held to a minimum in urgent situations after that time. The somatic effects of radiation, after thirty, are not sufficient to constitute any deterrant to a necessary diagnostic procedure. This is provided that the technical aspects of radiological directions are properly followed.

In regard to proper procedure, certain matters are essential. It is stated that there are about two hundred thousand x-ray machines in use. Only four thousand of them are in the hands and under the direction of qualified radiologists. Those who operate these machines, not under radiologists, must be meticulous in their adherence to recommended practice. The machines should be inspected and calibrated. Those which are unfit and cannot be made safe should be discarded. These are matters to be carried out by the technical radiologists who are not physicians.

Radiation exposure in fluoroscopy should be reduced to the minimum. This is accomplished by adequate attention to technical details, by using radiography in place of fluoroscopy whenever possible, and the avoidance of routine fluoroscopy, particularly of the chest, where a specific indication is not present. It is generally stated that radiation exposure in a routine detailed fluoroscopic examination of the chest is a thousand times that which would exist in a radiographic examination. Adherence to this principle would eliminate much of the routine fluoroscopy of children and entirely eliminate the use of fluoroscopic machines for the fitting of shoes for which there is no sound reason.

In substance, therefore, the radiologist and the physician using x-ray machines should follow a procedure which is technically and radiologically correct, and the public should understand that diagnostic procedures under these conditions which are necessary are not to be withheld because of a theoretical radiation hazard.

When the x-ray was discovered by Roentgen great enthusiasm was tempered by considerable anxiety. "X-ray proof clothing was advertised. A London paper advised against revolting indecency, and in New Jersey, a bill tried to ban x-rays in opera glasses." In view of such exhibitions of faulty perspective and loss of sense of proportion, sixty years ago, let us not move in a similar direction and become panicky about minimal doses of x-ray radiation where we have some qualitative experience but very little quantitative knowledge.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

REPORT OF THE PRESIDENT

1961—A Year of Challenge

And the Year of Crucial Decision

Each new year brings the opportunity to survey our past activities and to plan such revisions and expansions as seem indicated. It seems to me that during the past year we have had more challenge in our lives, and more to challenge our future operations than in any other recent year.

On the national level we have seen both major political parties endorse platforms which differ chiefly in the degree of socialization advocated. We have witnessed an indecisive election which reflected a large crossing over of party lines. We have witnessed a new administration coming into office, in which it seems that practically every appointment, every pronouncement, every measure of proposed legislation, and every device known to influence the minds and actions of men were being applied toward a rapid and complete socialization of our entire economy. No longer are we asked if this is what we want, or if we feel that the action is good for our Country. There has been a thoroughly organized and expertly manipulated program for convincing the American people that they will be given what they need, from a beneficent federal government, without concern to them about the cost, and without their apparent recognition of the inevitable resulting collapse of our economy. The individual examples of this are too numerous and too widely known to require tabulation here.

On the other hand, the very close margins by which these actions have gained endorsement, and the extent of outspoken concern for the continued well being of our Country, with its free institutions, its free people, its private enterprise history of attaining its present position of greatness, and the concern of the thinking segment of the population, present a great challenge. It appears that the crucial decision is now before us. Either America will permit itself to fall rapidly and completely into the hands of national and international governing groups which are completely socialistic in nature, or we will rise to the occasion and sustain and reassert the principles of state and local regulation of most phases of our lives.

It appears now that the supporting pressures are about equal on the opposing sides, hence the outcome would seem to depend on the extent of activity to determine the choice of our future. Therein lies the crux of the matter. What are you going to do about it personally, professionally, politically, and in relation to the general public?

As a physician, you enjoy a large measure of confidence of the people who live in your community. Even if medical groups have been made the whipping boy, collectively, in recent years, the people love us individually and have confidence in our leadership. There is a greater desire on the part of our people that doctors provide leadership in all their community projects than has ever before been expressed. Though they may not realize the impossibility on your part, of finding time and being able to enter into all the activities, and yet be found in your office when needed, as well as keeping abreast of the progress of modern medicine, they want you, and will listen to you. Therein lies your opportunity. Go to your people and tell them frankly and simply what you think is in store if we continue to spend billions on foreign aid, continue to increase the national debt, (the interest on which is calculated to be $17,000.00 per minute), continue to increase taxes, give more and more of their earnings to the federal government, and seek to obtain more and greater benefits from federal agencies, whether needed, deserved, or even wanted.

These expressions constitute the crystalized impression that comes from my year of labor as your president. It is the burden of my soul and the topic which I feel should have your most serious study.

It goes without saying that the year has been full of meetings, conferences and travel. Attending the AMA meetings in Miami and in Washington were highly informative experiences. The Public Relations Institute of the AMA in Chicago was enlightening, as were the special committee meetings and conferences in which I was privileged to represent our State Society. The big impression that came from every such meeting was a recognition of the problems facing our people and our profession, the fact that many of those involved, do not as yet show any recognition of this impending socialization, and the search for ways and means by which to enlist and interest others of our group to take up part of the program and help in the task.

After working long and earnestly in seeking to find ways and means to adequately provide for the assistance to the aging, where needed, through the cooperative efforts of many groups and many people, in the Louisiana State Confer-

ence on Aging, it was a severe shock to attend the White House Conference on Aging. The Delegates went there, some 2800, as serious minded men and women earnestly seeking the solution to a real problem. Many of us came away disillusioned by the smooth manipulations of politicians, social workers, representatives of labor organizations, federal employees, and above all the biased reporting of the "liberal" press, all with the same propaganda theme—"expansion of Social Security" to meet the needs of all segments of the population.

The Kerr-Mills Law passed by the last session of Congress has been implemented in eight states and is in the process of being implemented in 36 others. In a few other states the needed laws are in preparation or are under consideration. It appears that the program can be put in operation in Louisiana within a few months if legislation providing for a legal body to set standards for hospitals can be passed. With the extensive charity hospital system and the existing Welfare Department, it appears that the supplementary grants in aid to the states provided for by that legislation will enable Louisiana to provide amply for the needy aged.

Within our profession, our greatest problem is the failure on the part of so many physicians to realize the extensive efforts being put forth by our fellow practitioners who carry on the work of our State Society and the AMA. One good way to come to know these men and their work toward the preservation of American living at its best, is to attend the meetings of the AMA, its House of Delegates, its regional and sectional meetings, and to read the reports of its activities and services performed, in its publications. Through the years this has been the most stimulating experience of my practice and I cannot see how we can be really effective in our efforts unless we are fully cooperative with our fellow workers. It hurts deeply to hear the criticism of these workers by people who have not attended the meetings and been a part of the working team.

Other pressing and as yet unsolved problems of great importance to our profession include legislative activities at both the state and the national levels, improved public relations through further improving our working relationships with the news media, the relationships with the fields of insurance, law, nursing, hospitals, our office personnel, mental health both in and out of institutions, and the relationships of the private patient and the physician. This latter field constitutes the keystone of the whole system of the private practice of medicine. Many of these will be covered through committee reports being provided you.

Several committees have been earnestly engaged during the past year in efforts to promote better relationships with these and other groups. I hereby express my sincere gratitude to all of them for their diligence and their accomplishments. Where they report their work unfinished, I would certainly feel that a continuance of such committees would be in the best interest of the profession.

There are other committees which for years have been active in the preservation of that which we know to be good for our people, composed of men who devote long periods of their time quite unselfishly to these duties. They are often the unsung heroes of difficult encounters. I want to thank them collectively, in the name of the entire Society. I have an abiding gratitude for their performance.

The work of the Society has been most efficiently and promptly handled through the office of Dr. Cole and his associates. His pleasing personality, his calm efficiency, and his keen insight and good judgment have served the Society well at the national level as well as within our State. I shall always be grateful to him for his advice and counsel.

With the year drawing to a close, I must report to you that I have found in our membership as fine and dedicated group of men and women as could be found anywhere. I am grateful to all of them for the many kindnesses extended to me, and for the opportunity I have had of serving them. I hope to reflect that gratitude by my continued efforts to promote the best interests of our people and our profession.

O. B. OWENS, M. D. President

GOVERNOR DAVIS TO SPONSOR KERR-MILLS LEGISLATION

Governor Jimmie H. Davis reported in a statewide radio and television broadcast April 19 that legislation would be introduced at the May fiscal session of the Legislature to provide for the medical and health requirements of needy aged in Louisiana. The program will mean more liberal hospitalization benefits for the aged and increases in the amount of drug care for those with acute illnesses. If the Legislature acts favorably on Governor Davis' proposal, the Kerr-Mills law will be implemented in Louisiana.

LOUISIANA TRADE, BUSINESS GROUPS OPPOSE SS EXPANSION

A group of 20 Louisiana business and trade associations have written the state's congressional delegation protesting proposed increases in Social Security taxes and plans to increase the scope of the Social Security program. Specifically, the group opposed H.R. 6027 which would increase Social Security taxes by $500 million beginning January 1. In the letter to Louisiana congressmen and senators, the group said there are rumors that attempts will be made also to tack on medical care to this bill without the usual prior public hearings. They pointed out that since 1954,

every increase in Social Security tax has resulted in a greater departure from a social insurance concept and toward a federal welfare program. Among the groups endorsing the letter are:

Automotive Wholesalers Association of Louisiana, Chamber of Commerce of the New Orleans Area, Construction Industry Association of New Orleans, Deep South Farm Equipment Association, Louisiana Automobile Dealers Association, Inc., Louisiana Building Material Dealers Association, Louisiana Delta Council, Louisiana Manufacturers Association, Louisiana Oil Marketers Association, Louisiana Wholesale Grocers Association, Louisiana Wine and Spirits Foundation, Mid-Continent Oil and Gas Association (La.-Ark. Division), New Orleans Master Bakers' Association, Inc., Shreveport Chamber of Commerce, Shreveport Wholesale Credit Men's Association, Southern Pine Industry Committee and the Tri-State Bakers' Association.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

PALM READING MAY OFFER CLUE TO CONGENITAL HEART DISEASE

The pattern of lines in the palm of the hand may offer a clue to the presence of congenital heart disease, an article in the April 8 Journal of the American Medical Association said.

A correlation between the location of some lines and congenital heart defects was reported by Drs. Alfred R. Hale, John H. Phillips, and George E. Burch, Tulane University School of Medicine, New Orleans.

The researchers drew their conclusion from a comparison of the palm prints of 157 patients suffering congenital ailments and 143 patients who had acquired forms of heart disease.

The intricate patterns on the palm appear between the fourth and sixth month following conception, the physicians explained. Defects in development of the unborn child during this time may influence the lines on the palm and thus reflect developmental disturbances operative during this period, they said.

Except for growth, they said, these configurations once established never change throughout a person's life.

The authors pointed out that a relationship between particular palm line characteristics and specific types of congenital heart defects "awaits the collection of a large series of proved cases."

A.M.A. AND CHEST PHYSICIANS PLAN JOINT SESSION IN N. Y.

A full day scientific meeting, sponsored jointly by the American Medical Association and the American College of Chest Physicians, will be one of the outstanding features at the 110th annual A.M.A. convention in New York City, June 25-30.

Dr. Coleman B. Rabin, New York, secretary of the A.M.A. Section on Diseases of the Chest, planned the program for this joint meeting, which will be held on Monday, June 26. Chairman of the morning session will be Dr. Herman J. Moersch, Chicago, chairman of the A.M.A. Section on Diseases of the Chest. Chairman of the afternoon session will be Dr. Hollis E. Johnson, Nashville, Tenn., president-elect of the American College of Chest Physicians.

The joint program, which was arranged so as to be of interest to specialists and general practitioners alike, will follow the scientific assembly of the American College of Chest Physicians which is holding its 27th annual meeting in New

York, June 22-26, just prior to the A.M.A. session.

The program, first ever sponsored jointly by the two medical organizations, will consist of symposiums, panel discussions, the reading of scientific papers, roundtable luncheon meetings, and fireside conferences.

Subjects to be covered will include new approaches in the treatment of various forms of heart disease; tuberculosis in general hospitals; steroid treatment in lung diseases; modern diagnostic measures in heart disease; pulmonary diseases and the best forms of treatment; asthma; chronic bronchitis and emphysema; heart catheterization; recent advances in the treatment of cardiopulmonary diseases; modern treatment of angina due to stress or effort, and x-ray findings in heart and chest diseases.

Moderators of the symposium and panels will be Drs. Arthur M. Master, New York; Sol Katz, Washington, D. C., and George C. Griffith, Los Angeles.

Other physicians who will appear on the joint program are:

Felix Wroblewski, Henry Williams, Jr., Alvan L. Barach, Daniel Lukas, and Isadore Rosenfeld, all of New York; William Hollander, Boston; Eliot Corday, Beverly Hills; Howard Burchell and Norman Hepper, Rochester, Minn.; Irving J. Selikoff, Paterson, N. J.; Clarence S. Thomas, Nashville; W. Proctor Harvey, Washington, D. C., and George E. Burch, New Orleans.

One of the scientific papers will deal with the results of operative and high voltage radiation in the treatment of 628 cases of cancer of the lung. It will be read by Dr. David B. Boyd of Boston.

Other scientific papers will be delivered by Drs. Richard Overholt, Boston; John F. Briggs, St. Paul; George L. Waldbott, Detroit; Gustav J. Beck and Hylan A. Bickerman of New York, and Krishna Nanda, New Delhi.

Fireside conferences, where physicians discuss medical problems of the chest informally, will be held on Monday, June 26, as part of the joint session. These fireside conferences, always a popular feature at the annual meetings of the American College of Chest Physicians, will be built around 36 roundtables where attending physicians, along with prominent scientists, will discuss recent advances in diagnosis and treatment in all phases of heart-lung diseases.

In addition to the formal scientific session, the College will sponsor a new exhibit, entitled "Physiologic and Clinical Testing of Cardiac Function." This outstanding scientific exhibit, approved by the A.M.A. Council on Scientific Assembly, will be shown at New York's Coliseum beginning on Sunday afternoon, June 25.

SECTION OF OPHTHALMOLOGY AND OTOLARYNGOLOGY SOUTHERN MEDICAL ASSOCIATION

The section of Ophthalmology and Otolaryngology of the Southern Medical Association announces that they are now accepting papers by physicians of either specialty, living in the area of the Southern Medical Association for consideration for presentation at the next annual meeting to be held in Dallas, Texas, from November 6 to 9, 1961.

The paper or an abstract of the paper may be sent directly to the Secretary, Dr. Albert C. Esposito, Suite 1212, First Huntington National Bank Building, Huntington, West Virginia, as soon as possible.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Applications for certification in the American Board of Obstetrics and Gynecology, new and reopened, for the 1962 Part 1 Examinations are now being accepted. All candidates are urged to make such application at the earliest possible date. The deadline date for receipt of applications is August the first, 1961. **No applications can be accepted after that date.**

Candidates for admission to the Examinations are required to submit with their application, a plain typewritten list of all patients admitted to the hospitals where they practice, for the year preceeding their application, or the year prior to their request for reopening of their application. This information is to be attested to by the Record Librarian of the hospital or hospitals and submitted on paper 8½ x 11". Necessary details to be contained in the list of admissions is outlined in the Bulletin and must be followed closely.

Current Bulletins outlining present requirements may be obtained by writing to the Secretary's office, 2105 Adelbert Road, Cleveland 6, Ohio.

All Diplomates of this Board are requested to inform the Office of the Secretary of a change in address. Your cooperation will be appreciated.

BOOK REVIEWS

Childbearing Before and After Thirty-Five; Biologic and Social Implications; by Adrien Bleyer, M. D., Vantage Press, Inc., New York, New York, 1959, pp. 119. Price $2.95.

This 119 page volume contains 17 tables and 14 charts, some of which are ectopic.

In a very readable and entertaining manner, the author presents facts which indicate that young mothers bear the best babies; consequently, he advises early childbearing. Even though the risk of a defective baby is high after age thirty-five, it still does not reach the percentage that would cause it to out-weigh the advantages.

Inasmuch as this book would certainly discourage any prospective mother over thirty-five years of age, rarely would we recommend that such a person read it. For others who are and should be interested in the subject, this volume is recommended.

WOODARD D. BEACHAM, M. D.

Aids to Gynecology; by William Ralph Winterton, 12th ed., Williams & Wilkins, 1960, pp. 214. Price $3.00.

This small text should be an aid to students in Gynecology, but as intended, certainly should not replace the more detailed larger texts.

The chapter devoted to pelvic infections is rather abbreviated as well as that on granulomatous conditions of the external genitalia.

The importance of relating diseases of the pelvic organs to other organ systems and of examining the entire patient by thorough history and physical was not emphasized.

The lack of statistics was pleasing and the illustrations adequate. The style was smooth and the organization made reading enjoyable.

GEORGE BALL, M. D.

What Price Medical Care?; by Sir Earle Page, Lippincott, 1960, pp. 160. Price $3.50.

Sir Earle Page was the originator of the Australian Health Plan. This plan contains an arrangement by which government aid is provided to strengthen voluntary medical insurance. This book devotes much space to the author's opinion of the similarity of Australia to the United States. This comparison is made in order to point out that a plan similar to the Australian Health Plan could work in the United States. Too little space is given to a factual report of the Australian Health Plan. General terms are used entirely. Very few specific points are taken up and adequately discussed.

The writing style lends itself to quick reading. In light of the present trend toward governmental support to the care of the patient, the book is worth reading. Some insight can be gained on the steps taken by other countries in meeting the prolbems of the increasing cost of medical treatment. However, much is left unsaid in this short book.

THOMAS D. DARBY, M. D.

Sight: A Handbook for Laymen; by Roy O. Scholz, M. D., Doubleday and Co. Inc., Garden City, New York, pp. 166, 13 illustrations. Price $3.50.

Dr. Scholz has prepared a handbook which will be of considerable value to both the ophthalmologist and the intelligent layman who is concerned with understanding ocular problems. Dr. Scholz has written the book in a brief but clear style and discusses structure, function, malfunctions and diseases of the eye. He discusses principles of treatment but makes adequate allowances for the various acceptable variations in the methods of care of ocular problems. He briefly summarizes the prognoses for these various problems.

The busy ophthalmologist will find this a handy reference to save his time in dealing with intelligent patients and their relatives for they will be able to obtain adequate information on their ocular problems from this book. However, some inquisitive individuals will find it a stimulus to seek further information.

JAMES H. ALLEN, M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., Inc., Garden City, N. Y.: Childbirth with Hypnosis, by William S. Kroger, M. D., edited by Jules Steinberg; Lose Weight and Live, by Robert P. Goldman with a foreword by Dr. Harold Willard; Mirage of Health, by Rene Dubos; The Changing Years, by Madeline Gray; The Family Handbook of Home Nursing & Medical Care, by I. J. Rossman, M. D. and Doris R. Schwartz, R. N.

Paul B. Hoeber, Inc., New York, N. Y.: Clinical Obstetrics and Gynecology, Volume 4, Number 1: Obstetric Anesthesia and Analgesia, edited by Robert A. Hingson, M. D.; Vaginal Surgery, edited by Abraham F. Lash, M. D.

Lange Medical Publicataions, Los Altos, California: Handbook of Pediatrics (4th Edition), by Henry K. Silver, M. D., C. Henry Kempe, M. D. and Henry B. Bruyn, M. D.; Handbook of Surgery, edited by John L. Wilson, M. D. and Joseph L. McDonald, M. D.

C. V. Mosby Co., St. Louis, Mo.: Management of Hypertensive Diseases, by Joseph C. Edwards, M. D.

W. B. Saunders Company, Philadelphia, Pa.: Medical Almanac 1961/1962, compiled by Peter S. Nagan, A. B., M. A., M. S.

Charles C Thomas, Publisher, Springfield, Ill.: Strangulation Obstruction, by Isidore Cohn, Jr., M. D., with a preface by I. S. Ravdin, M. D. and a foreword by James D. Rives, M. D.